TEXAS HIGHWAY DEPARTMENT

Construction & Maintenance

BULLETIN No. 25

July, 1953

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Third Anniversary

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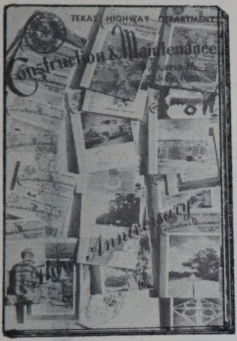

With this issue C & M celebrates its third birthday Starting in July, 1950, the first copy was printed and distributed. Today with this twenty-fifth copy, circulation has practically doubled and it is hoped that a noticeable improvement can be seen in the diet of material and the methods of presentation. For additional information on C & M anniversary, see story on page 13.

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Construction and Maintenance Bulletin

The purpose of the *Construction & Maintenance Bulletin* is to furnish a medium for presenting practical information applicable to current highway problems. These conclusions and data are not necessarily endorsed by the Highway Department nor are they to be construed as instructions. Employees are invited and urged to submit suggestions and relate experiences which would benefit those engaged in the construction and maintenance of highways.

Photographic services are available and other assistance may be obtained, if desired, in preparing material for submission. All material and comments should be directed to the Chief Engineer, Construction and Maintenance, Austin 14, Texas.

The *Construction & Maintenance Bulletin* is published monthly by and for State Highway Employees for departmental use only. The use or reproduction of the material contained herein is prohibited without the expressed permission of the State Highway Engineer.

PUBLISHED JOINTLY BY

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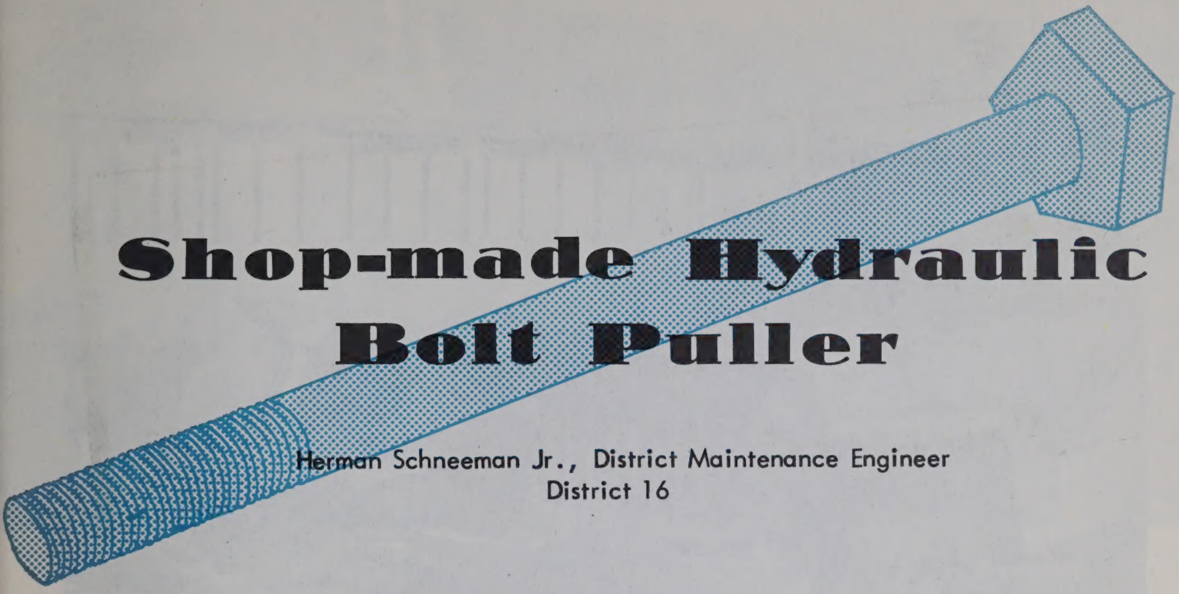
Traffic Services Division, INFORMATION SECTION

REPRODUCED
Operations Division, REPRODUCTION SECTION

Government is a trust, and the officers of the government are trustees; and both the trust and the trustees are created for the benefit of the people.

HENRY CLAY



Shop-made Hydraulic Bolt Puller

Herman Schneeman Jr., District Maintenance Engineer
District 16

Upon completion of the new causeway across Nueces Bay on U. S. 181, it became desirable to dismantle the old causeway, which had become entirely inadequate for traffic.

This old structure was constructed entirely of treated timber on treated timber piling and was completed in 1921. It was destroyed in the 1933 hurricane and rebuilt at that time.

The old structure consisted of 484 timber spans and one 42-foot steel bascule lift span across a navigable channel for an over-all length of 8, 264 feet. The timber spans consisted of four inch by twelve inch by eighteen foot stringers on seventeen and one-fourth inches center to center with two inch by four inch by twenty foot laminated floor and were supported by four pile bents.

Approximately 80 per cent of the timber in this structure was estimated to be in good condition. It was also estimated that about 75 per cent of the 16, 000 bolts used in the structure were in good condition and could be used in repairing timber structures elsewhere in the District.

Under ordinary conditions these bolts would have been removed by driving them out with a drift pin. When this was done, the bolt was damaged to such an extent that it would require rethreading or would have to be discarded.

J.C. McMeans, District Equipment Supervisor, built a hydraulic bolt puller which would remove these bolts without any damage to the timber or bolts. This piece of equipment was built in the District Shop using materials on hand.

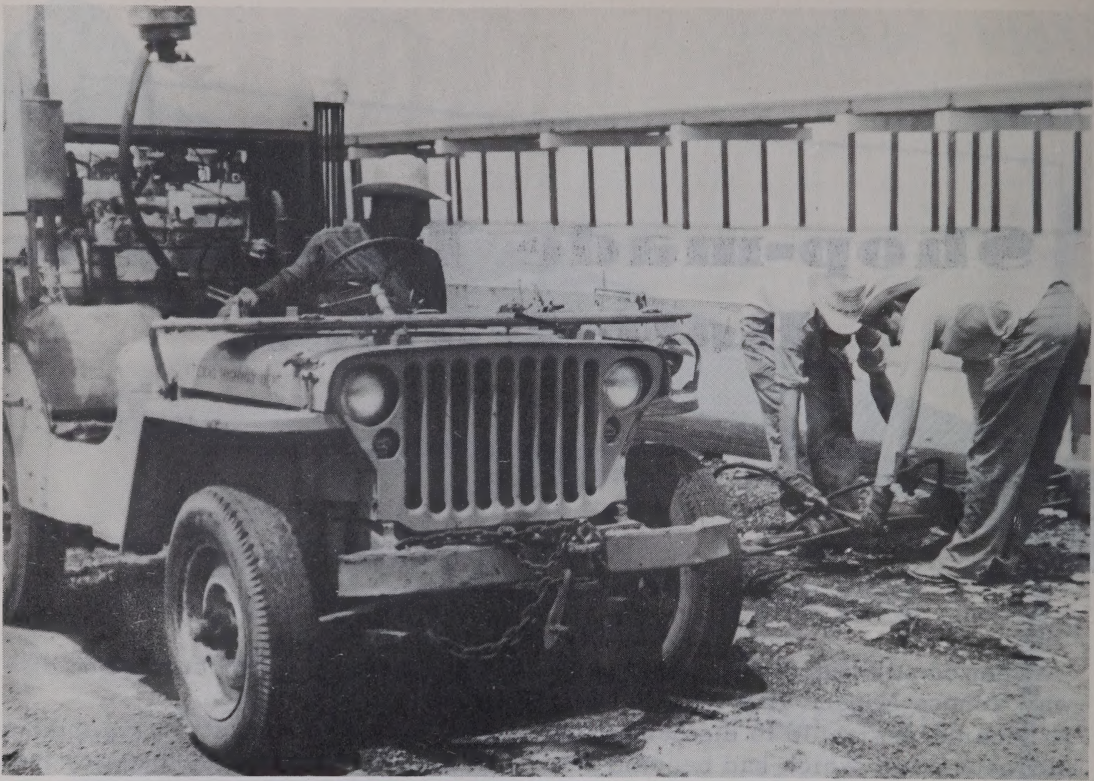
Materials used in building the hydraulic bolt puller are:

Motor: Six-cylinder Plymouth Engine.

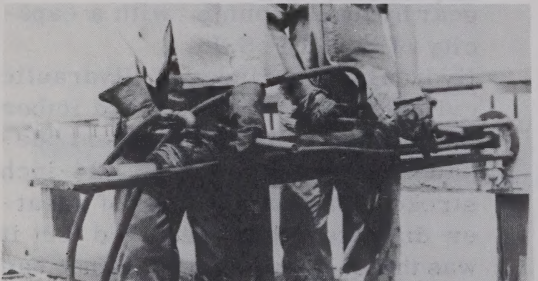
Hydraulic Pump: Vickers rotary gear hydraulic pump, with a capacity of 3, 000 P. S. I.

Hydraulic Cylinder: Hydraulic cylinder taken from an old Huber Maintainer with a four and one-half-inch cylinder and 24-inch stroke. The cylinder was of greater diameter than required but it was the only one available that had a pulling stroke long enough to pull 22-inch bolts. A lighter cylinder would decrease the weight of the bolt puller and make it easier to operate, thus requiring only two men for the bolt-pulling operation instead of the three now required.

The normal capacity of the machine is about five 22-inch bolts per minute with a maximum capacity of seven bolts per minute.



Complete unit in operation – jeep with hydraulic pump and motor mounted in rear. Hydraulic jack is pulling bolts from felloe guard.



Hydraulic cylinder jack. Workmen prepare to place pulling collar over head of bolt in railing.

Hydraulic cylinder has one of the railing bolts nearly out.

ROAD MACHINERY - 1953

John W. Simpson, Resident Engineer
District 2

Old-timers driving along a nine-mile section of U.S. 281 recently probably experienced a feeling of nostalgia when they saw a team of mules being used on construction.

This section of road, from the intersection with State Highway 199 south of Jacksboro to the Palo Pinto County Line is in the process of being widened and all structures extended. Harold Martin, contractor on structure extensions, faced with the problem of removing one to four feet of silt from approximately fourteen box culverts, hit on the idea of using a team and slip when he saw them being used near the project in removing manure from a feed lot.

The team was placed at one end of the culvert, a chain pulled through the barrel and connected to the slip at the other end. Then a few choice words to the mules by the driver, and work commenced. As shown in the pictures, one man guided the slip through the barrel while the mules pulled. The method worked very well and economically; in fact Martin plans to use it in the future when faced with the same operation--if he can find a team of mules.

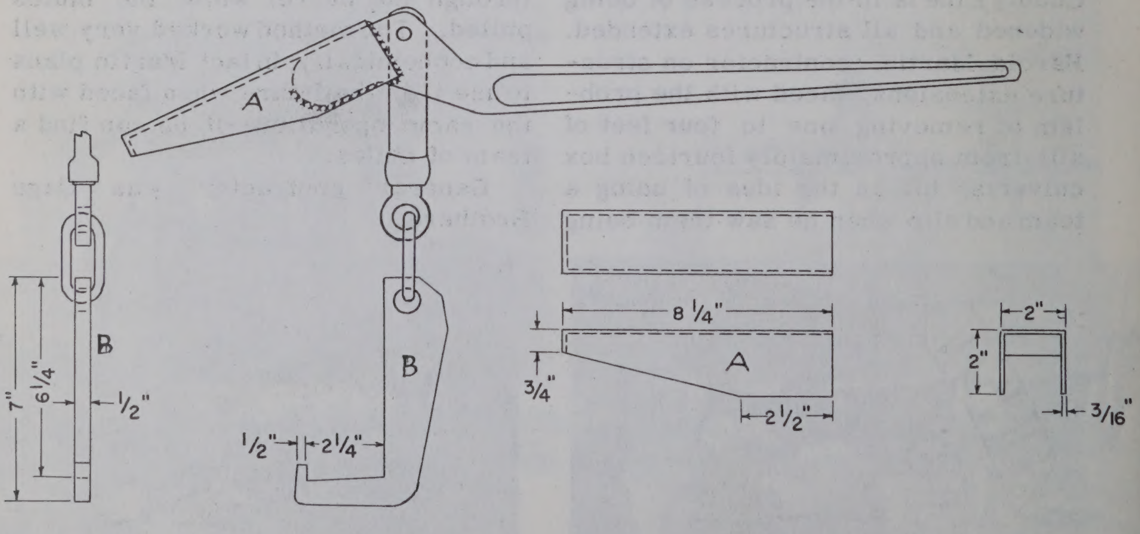
General contractor was Gage Brothers.

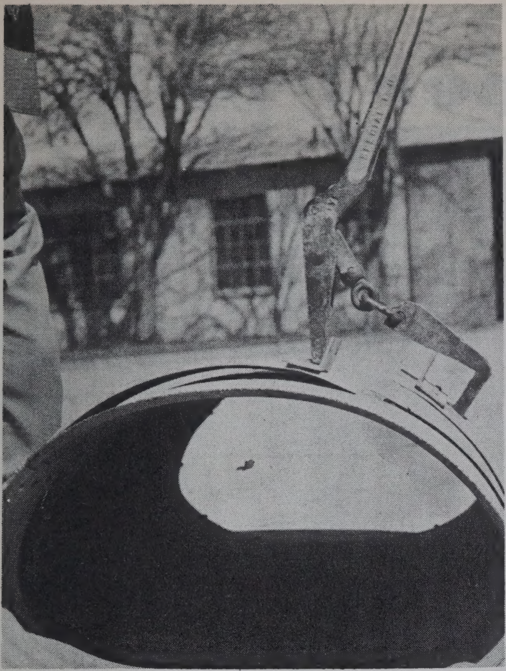
COUPLING AID
FOR
CORRUGATED GALVANIZED METAL PIPE

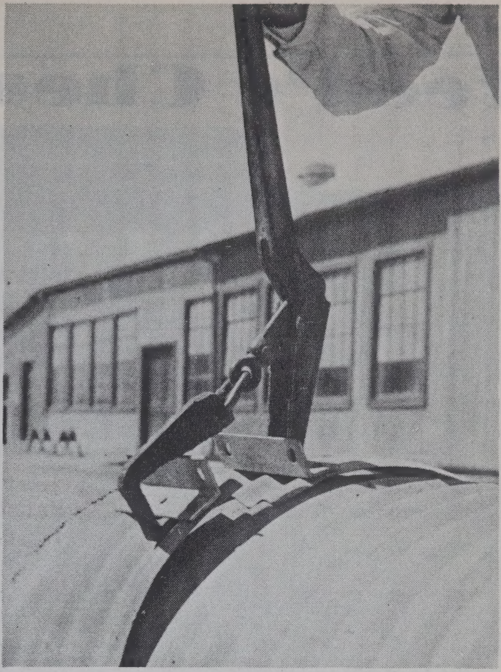
C.N. Parsons, Assistant District Engineer
District 22

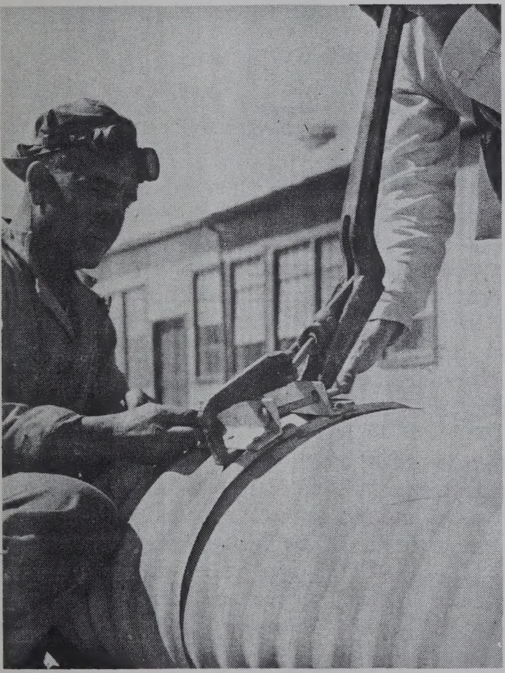
The accompanying sketch and photographs portray a device conceived and built by C. V. Fellows, Construction Superintendent in District 22, to aid in the coupling together of corrugated metal pipe sections.

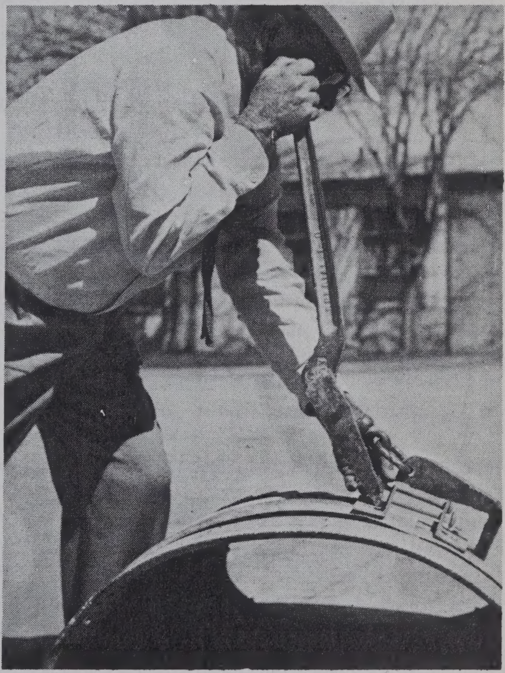
As can be seen, it is constructed from parts of a boomer, pieces of scrap metal, and a chain link. This is a timesaver and makes an easy job out of a task which sometimes runs into work, especially when coupling the larger sizes of pipe together. The device shown in the photographs was built especially for pipes 36 inches in diameter and larger, however it can readily be adapted for the smaller sizes by decreasing the size hook.

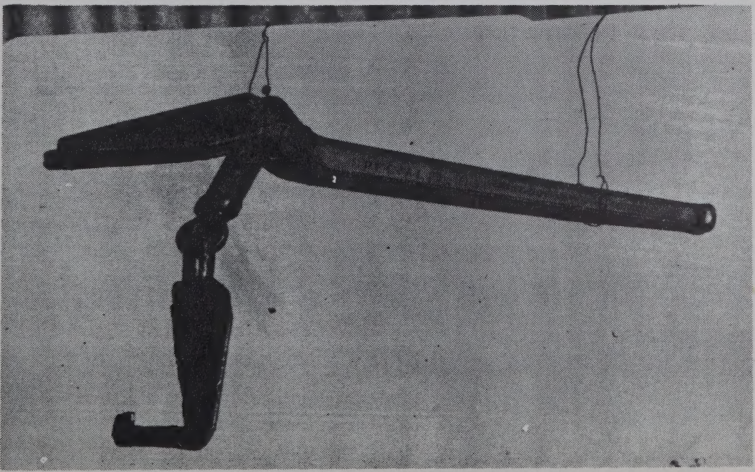




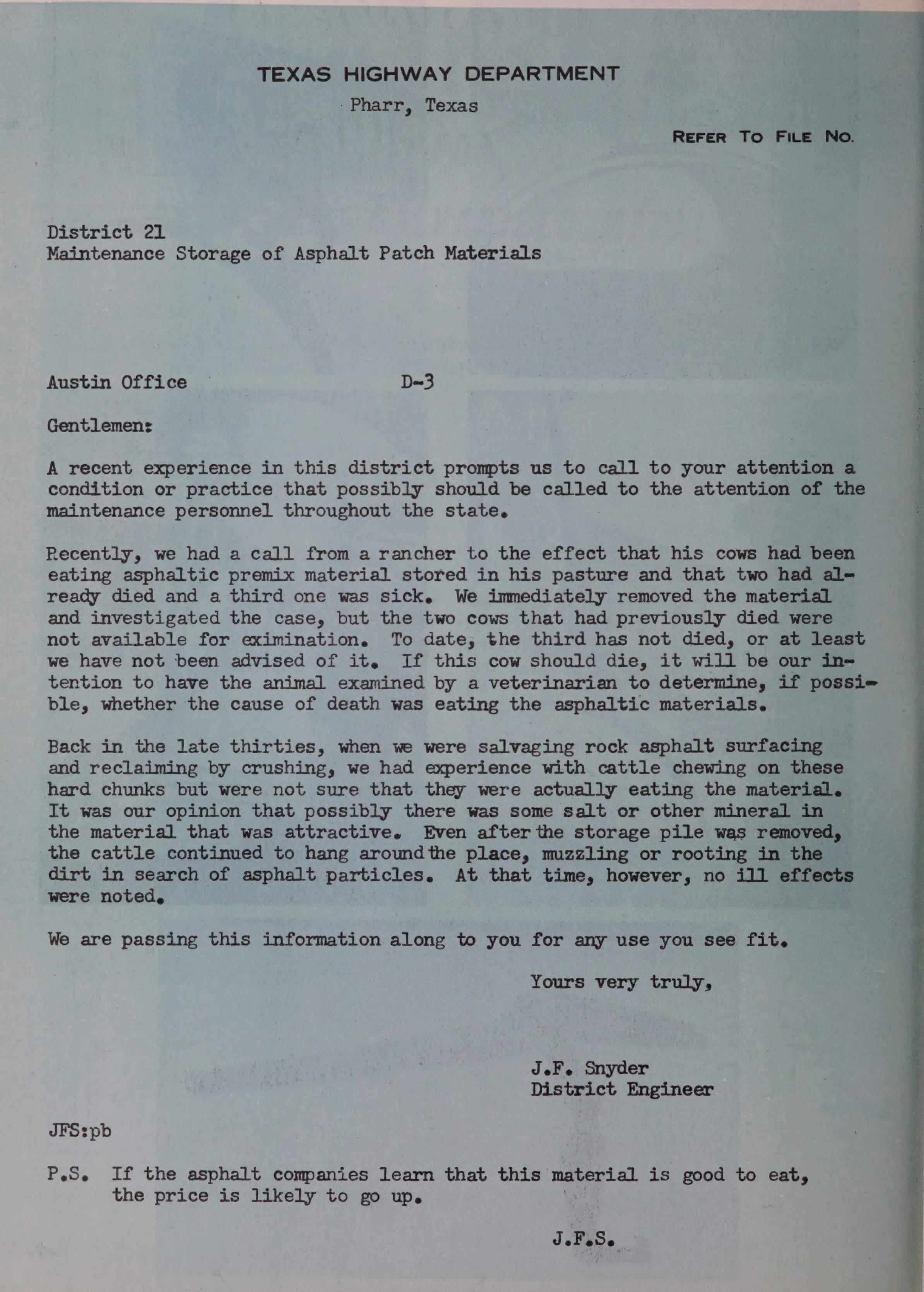








Feed's Cheaper!



TEXAS HIGHWAY DEPARTMENT
Pharr, Texas

REFER TO FILE NO.

District 21
Maintenance Storage of Asphalt Patch Materials

Austin Office D-3

Gentlemen:

A recent experience in this district prompts us to call to your attention a condition or practice that possibly should be called to the attention of the maintenance personnel throughout the state.

Recently, we had a call from a rancher to the effect that his cows had been eating asphaltic premix material stored in his pasture and that two had already died and a third one was sick. We immediately removed the material and investigated the case, but the two cows that had previously died were not available for eximination. To date, the third has not died, or at least we have not been advised of it. If this cow should die, it will be our intention to have the animal examined by a veterinarian to determine, if possible, whether the cause of death was eating the asphaltic materials.

Back in the late thirties, when we were salvaging rock asphalt surfacing and reclaiming by crushing, we had experience with cattle chewing on these hard chunks but were not sure that they were actually eating the material. It was our opinion that possibly there was some salt or other mineral in the material that was attractive. Even after the storage pile was removed, the cattle continued to hang around the place, muzzling or rooting in the dirt in search of asphalt particles. At that time, however, no ill effects were noted.

We are passing this information along to you for any use you see fit.

Yours very truly,

J.F. Snyder
District Engineer

JFS:pb

P.S. If the asphalt companies learn that this material is good to eat, the price is likely to go up.

J.F.S.

THE STATE OF TEXAS

Personnel Changes

H.L. Arno, Director of Personnel

1. Bridge Division, Austin: Henry Harkleroad, Assistant Bridge Engineer, retired May 31, 1953.

2. Bridge Division, Austin: Clyde F. Silvus changed from Supervising Operations Engineer to Assistant Bridge Engineer June 1, 1953.

3. Bridge Division, Austin: Sam Huff changed from Senior Field Engineer to Supervising Operations Engineer June 1, 1953.

4. Bridge Division, Austin: Lewis Pennock changed from Senior Designing Engineer to Senior Field Engineer June 1, 1953.

5. Insurance Division, Cuero: John H. Lawrence changed from Safety Instructor to Senior Safety Instructor June 1, 1953.

6. District 19, County Residency, Carthage: Thomas G. Hunter changed from Resident Engineer to Senior Resident Engineer June 1, 1953.

7. District 11, District Headquarters, Lufkin: R. L. Rothe changed from Senior Designing Engineer to District Construction Engineer June 1, 1953.

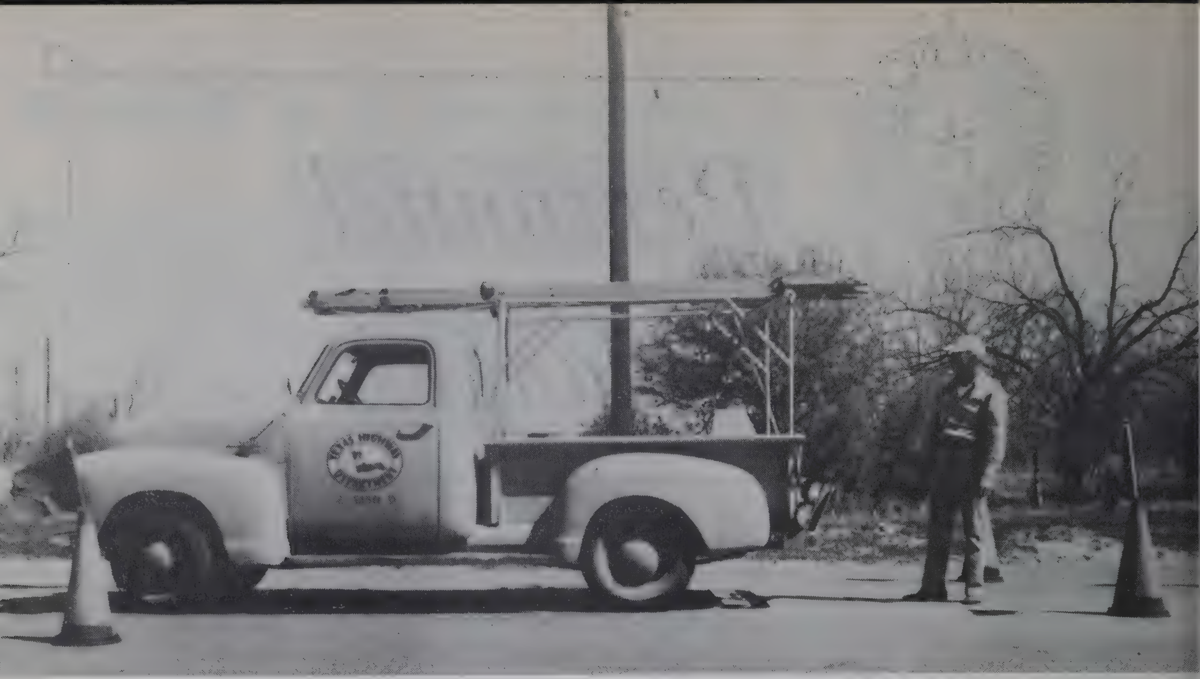
8. District 2, District Headquarters, Fort Worth: Wallace Ewell changed from Senior Designing Engineer to Senior Resident Engineer June 1, 1953.

9. District 8, County Residency, Abilene: Wade O. Crawford reappointed May 11, 1953, as Senior Resident Engineer after service in the U. S. Navy.

10. District 16, County Residency, Corpus Christi: Harry J. Hopkins changed from Resident Engineer to Senior Resident Engineer June 1, 1953.

11. District 11, County Residency, Lufkin: W. L. Stockton changed from Resident Engineer to Senior Resident Engineer June 1, 1953.

12. Bridge Division, Austin: F. L. McRee appointed as Senior Designing Engineer June 4, 1953. (Summer employment)



Ladder truck with ladder in carrying position on frame.

Ladder Truck

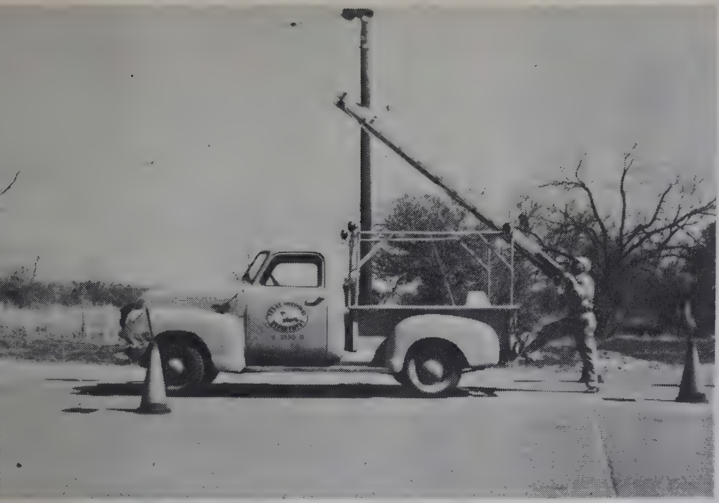
W. N. Hammond, Associate Designing Engineer
District 2

District 2 shop personnel recently designed and built a special ladder truck for use in maintaining traffic signals and other elevated utilities. Using the bed of a one-half ton Chevrolet pickup truck as a mounting platform, District Mechanics J. N. Maloney and C. L. Redmon working under the supervision of J. H. Dilleshaw, District Equipment Supervisor, built a lightweight ladder truck that has proved both efficient and safe in work done to date.

As can be seen in the photographs, the ladder unit consists essentially of a two-section sliding ladder mounted on a supporting frame constructed of standard round pipe. Special feature of the pipe frame is the pipe anchor hinge that the ladder is attached to on the top rear of the frame. This hinge, which is visible in the rear view picture of the truck, provides a means of rotating the ladder to the vertical position and at the same time allows the ladder to slide through the hinge brackets and connect to the base anchor on the bumper.

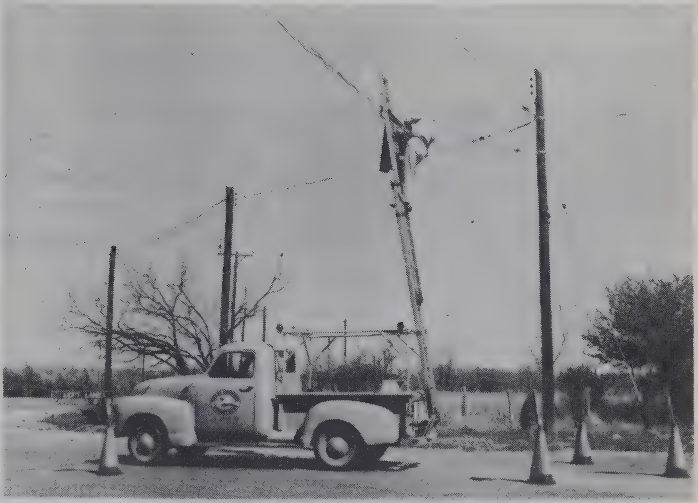
The bumper anchor was constructed of pipe and standard structural steel shapes and is connected to the pickup frame. When in use, the ladder is connected to this anchor by means of two slotted plates which are bolted to and part of the ladder. These slotted plates slip over the cross pipe of the anchor and provide a quick and safe connection.

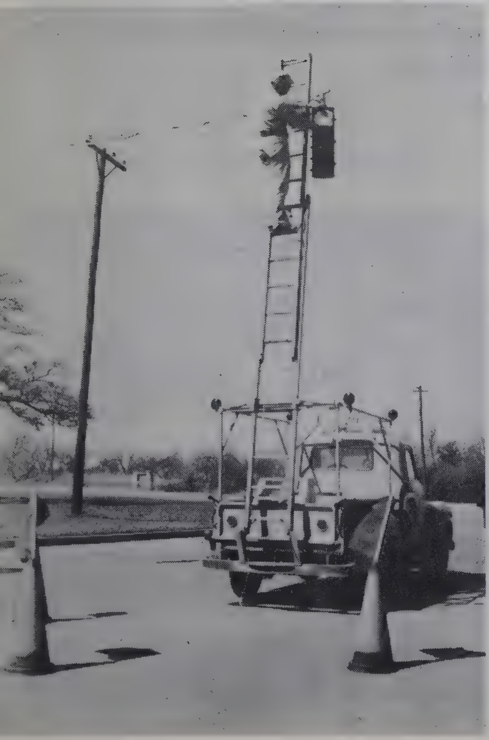
The truck is equipped with two red blinker lights, both front and rear. These lights are operated at all times when the truck is stopped on the roadway. They provide a warning to traffic and additional safety for maintenance workers.



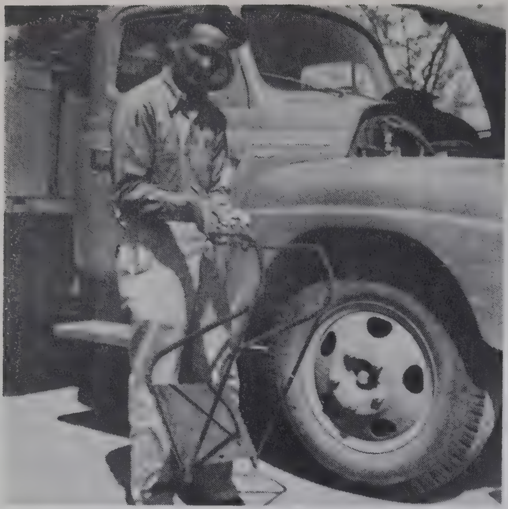
Ladder is being raised to vertical position by Electrician Mechanic J.N. Maloney.

Here, the ladder is being used by District 2 electrician making repairs to traffic signal head. Note safety belts used to secure ladder to wire suspension strand and to protect workmen from falls.



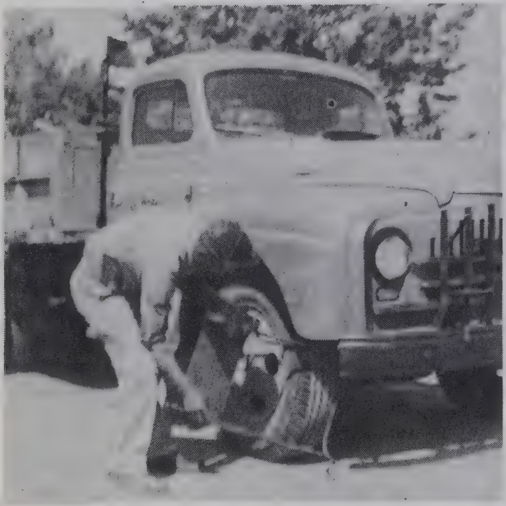


Ladder in raised position with electrician working on signal head. Note red blinker lights installed on front and rear of frame for traffic warning.



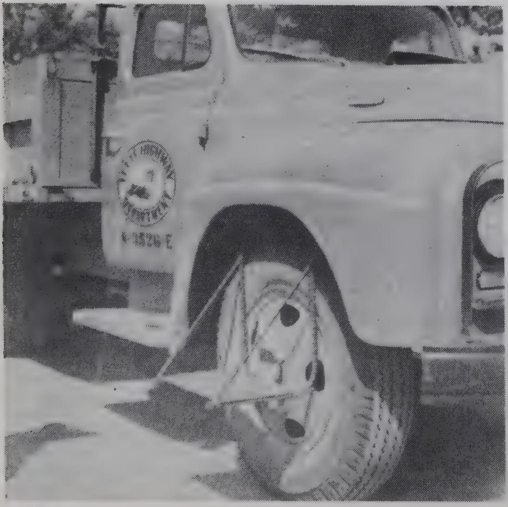
Mechanic's Truck Service Step

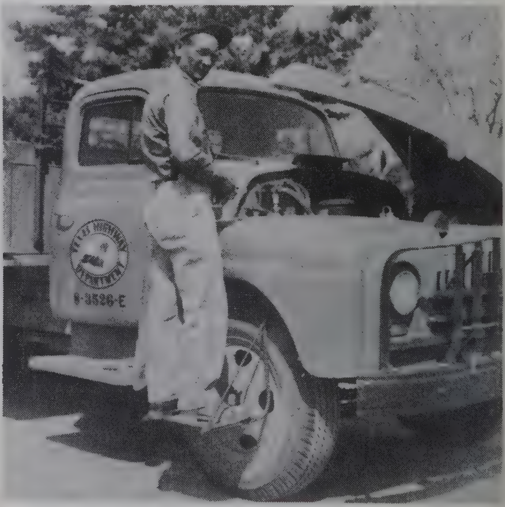
Floyd C. Burge, Skilled Laborer
District 8



The height off the ground of modern truck bodies has made engine service awkward and difficult without some sort of platform on which the service man can stand.

We have designed and built a service step that attaches to the front wheel of the truck, which has proven very satisfactory. As shown in the pictures, this step is lightweight, sturdy, and may be used wherever the truck is parked. The step was made of a three-eighths-inch reinforcing bar with one-half-inch braces and nonskid step.





Third Anniversary

On the occasion of the third anniversary of C & M, we take this opportunity to thank both our readers and our contributors for three years of cooperation.

C & M has grown from a bimonthly publication to a monthly over this three-year period. We were able to do this because the field and Austin offices worked up enough material to fill a bulletin every month.

Starting out in July of 1950, C & M rocked along as a bimonthly publication. At least, it worked out that way. An issue was put out every time enough material could be scraped together between the field and Austin office, and we managed to stay on a two-month schedule. In July of 1952, C & M started coming out every month, and has continued at that rate for the last year. It will continue to be a monthly publication so long as material is available.

We hope that the bulletin has served the purpose for which it was established -- as a medium for exchanging thoughts, theories, and methods of operation throughout the Department. If some district has been working on a short cut in some operational method, and got an idea from an article sent in by another district on how to carry out their plan, then the bulletin is on the right track.

Any suggestions, ideas, letters pro and con, will be welcome. And most important, keep the articles coming. As long as you write the bulletin, we'll keep putting in together.

Crawler pad, showing eye with section cut out prior to re-forming and worn lugs being built up to replace wear.

REWORKING DRAGLINE TRACKS

L.F. Hinkson, Equipment Supervisor
District 1

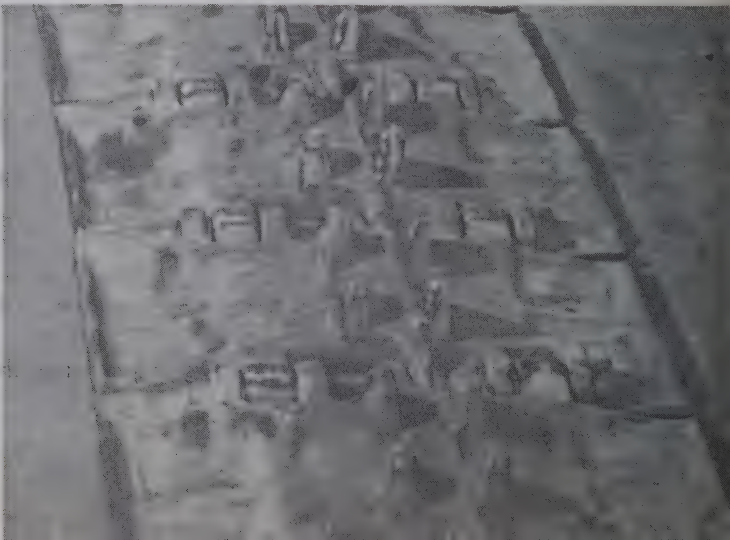
Recently, the worn tracks for a one-half cubic yard Lorain Crawler Dragline were reworked in the District Shop. The driving lugs and the single eyes at the ends of the pads were badly worn.

The worn areas of the lugs were built up, using a general purpose hard surfacing rod.

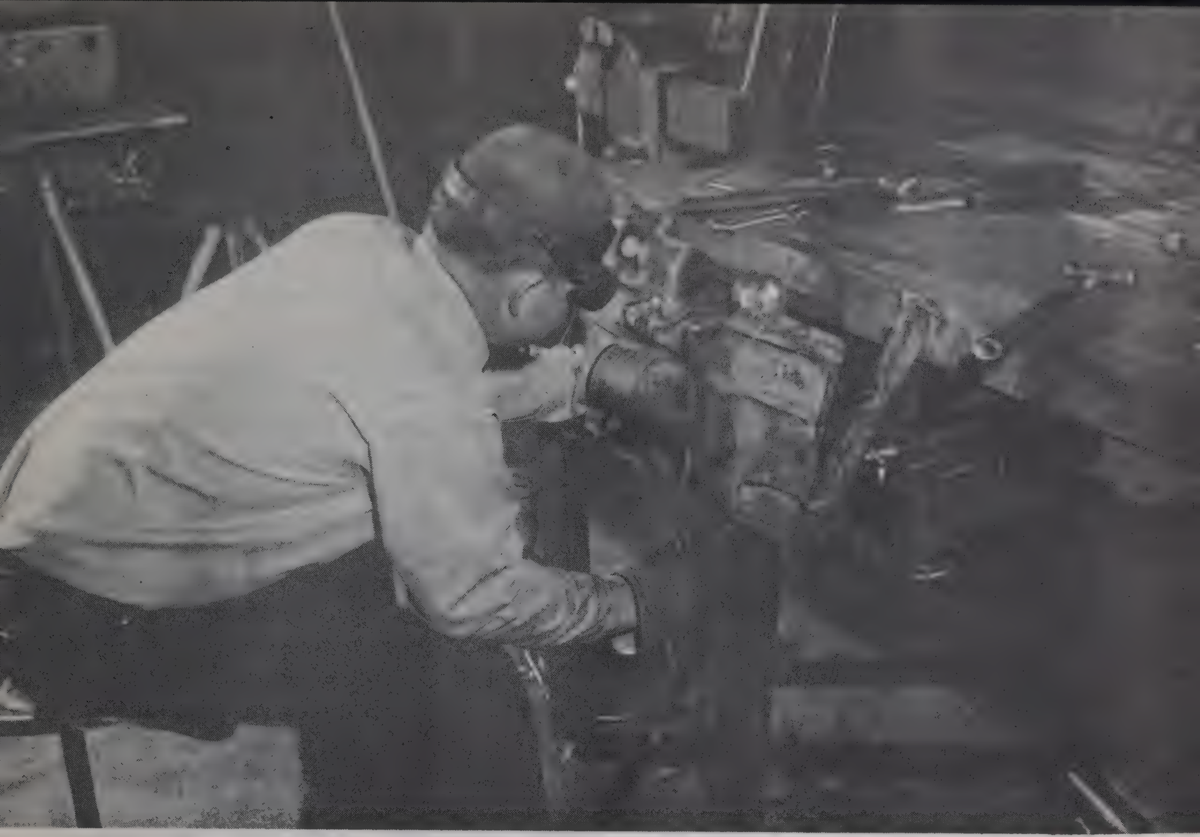
The eyes were re-formed by cutting out a section of the eye with a torch, heating and re-forming the eye, and then welding the eye back together. For re-forming, the eye was heated and formed around a one-and-five-sixteenths-inch mandrel with a hammer. The one-and-five-sixteenths-inch mandrel gave a good fit for one-and-one-fourth-inch pins.

New pins were made from one and one-fourth-inch cold rolled shafting instead of the harder steel that had been used for the original pins. The softer material was used for the pins to allow more wear to be taken up by the pins and to reduce the wear on the eyes of the pads.

The cost of reworking the tracks was $344.57 as compared to a purchase price of approximately $1,950 for a new set of tracks.



Section of track after reworking was completed.



Section of eye is cut out of crawler pad so that it can be re-formed to correct size.

These workers are re-forming eye to correct size after section has been cut out.

ALL-PURPOSE TITLE SHEET

L.K. Willis, Assistant District Engineer
District 7

To reduce the drafting work in connection with preparing plans for a district-wide seal coat, blade mix, or similar job, District 7 has adopted a system whereby all of the information needed by the contractor or engineer for such jobs is tabulated in one set of plans served by one ready-made title sheet. This title sheet contains a district map and can be used for any type of plans. More detailed information, when desired, may be given by means of an insert on a larger scale.

The first step in preparing a title sheet for this type of job was to make a linen tracing of the regular 18-by-24-inch District Control-Section Map showing all of the highways, towns, railroads, and other information usually placed on a title sheet. The control and section numbers and other information not needed by the contractors or inspectors were left off. The control-section symbols were shown to facilitate the spotting of projects.

This tracing was reduced in size to fit a minor project title sheet, with the usual notes, and was reproduced on a supply of minor project title sheet blanks by the Austin Office and furnished the District Office for future use.

The only drafting work necessary in preparing a set of seal coat, blade mix, or similar plans then is to spot the various projects on the map with the project numbers, indicate the mileage and tabulate the necessary data as indicated by the index of sheets on the accompanying reproduction of a typical title sheet used for a seal coat job. The completion of this title sheet for the eighteen scattered seal coat projects required an hour of drafting time to complete. The complete plans for our district-wide seal coat project of 104.5 miles required about 25 per cent of the time formerly used in preparation of such plans.

INDEX OF SHEETS

1 — Title Sheet
2 — Limits and Mileage
3 — Exceptions and Equations
4 — Location of Stock Piles
5 — Basis of Estimate
6 — Estimate & Quantity
7 — Estimate Summary
8 — BW-46(1)
9 — BW-46(2)

TEXAS STATE HIGHWAY DEPARTMENT PLANS OF PROPOSED IMPROVEMENT

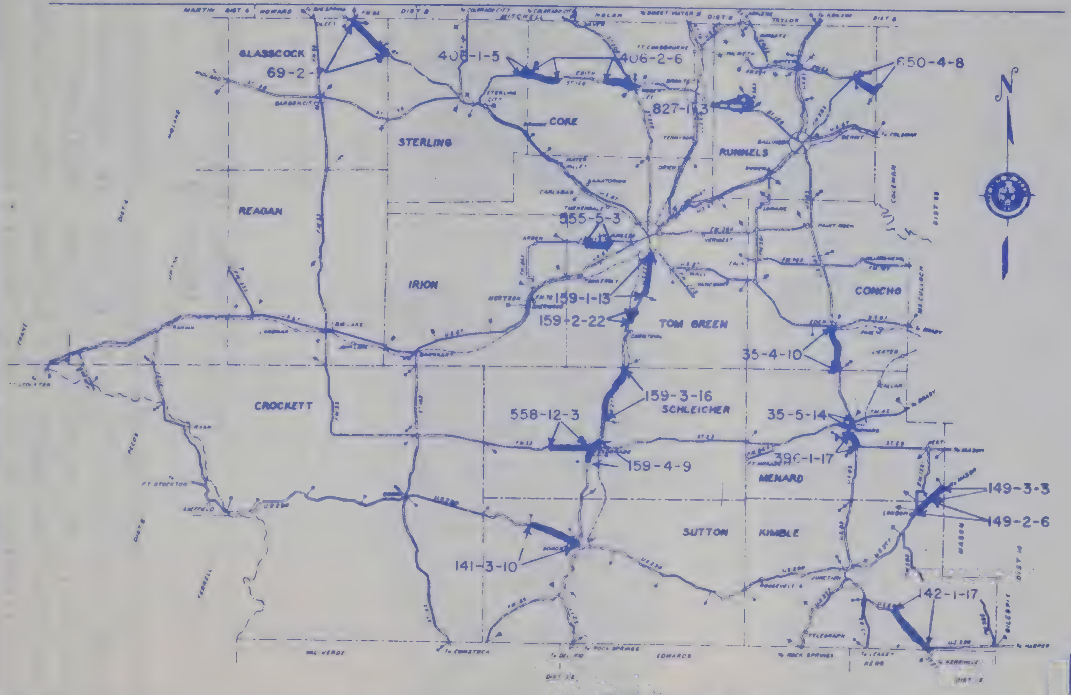
PROJECT No. (SEE SHEET No. 2)

COUNTY - HIGHWAY NO. (SEE SHEET No. 2)

NET LENGTH 551,983.9 FT. 104.542 MILES (SEE SHEET No. 2)

SEAL COAT

	DATE
PLANS PREPARED	
LETTING	
WORK STARTED	
WORK COMPLETED	



LAYOUT SCALE: 1 IN.= FT.

Specifications adopted by the State Highway Department of Texas, Jan. 2, 1951, and approved by the U.S. Bureau of Public Roads, July 25, 1951, and specification items listed and dated as follows shall govern on this project. Special labor provisions for Texas Highway Projects adopted, August 11, 1948.

The Contractors attention is directed to the special provisions concerning "Detours, Barricades, Warning Signs, Sequence of Work, etc."

For location of delivery points see location of Railroads on map at left.

RECOMMENDED FOR APPROVAL

2-19-53
DATE

DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL [redacted]

[redacted]

MAINTENANCE ENGINEER

APPROVED [redacted]

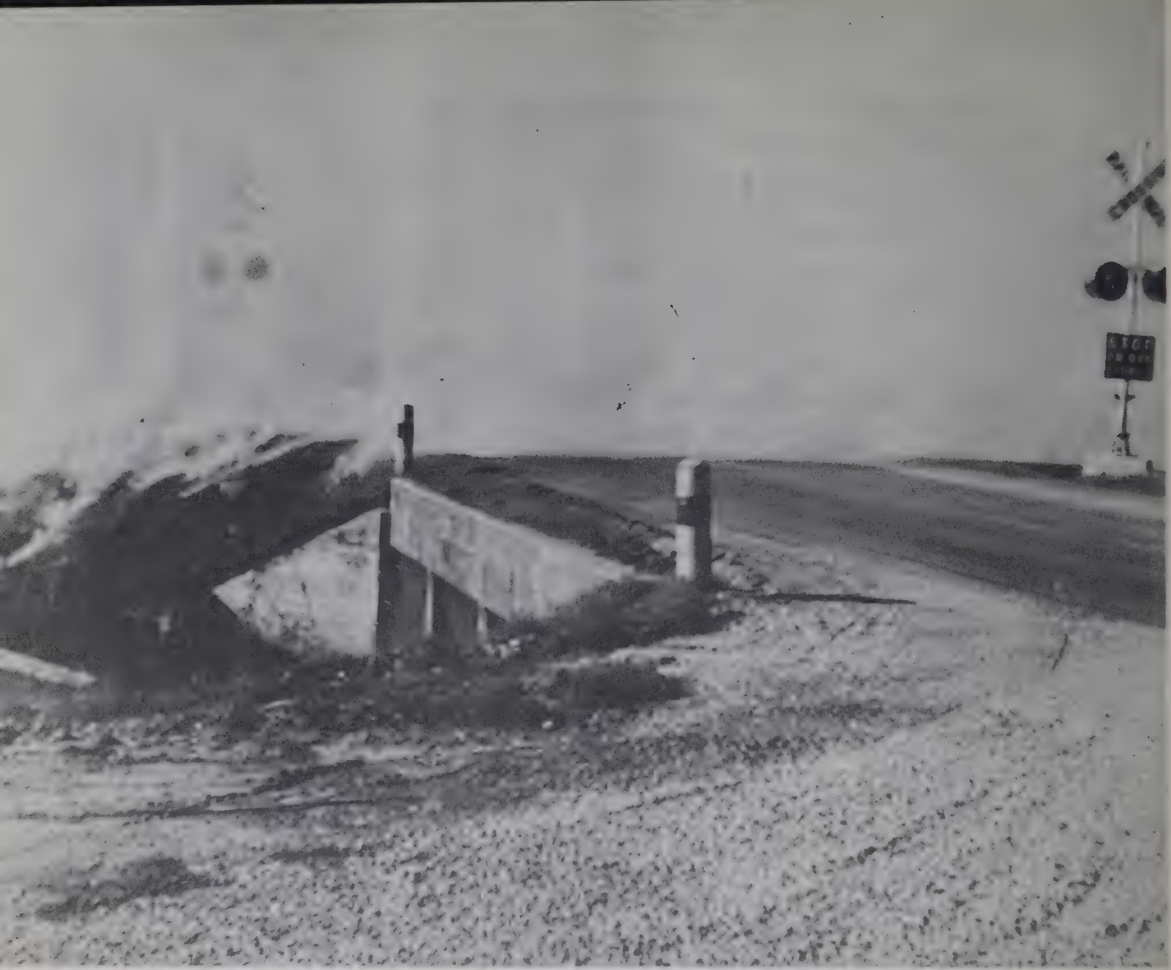
[redacted]

CHIEF ENGINEER OF PLANNING

RECOMMENDED FOR APPROVAL [redacted]

[redacted]

ENGINEER ROAD DESIGN



SMOKE SCREEN

M.G. Cornelius, District Engineer
District 13

A very effective smoke screen was recently laid across U.S. 87 in Victoria County. From the picture it can be seen that the smoke is a serious hazard to traffic. W.A. King, Senior Resident Engineer of Victoria, observed and photographed this scene in which non-highway workers were negligent in burning weeds upwind from the highway. Experienced maintenance employees are careful to avoid causing conditions such as this.

Highway Relocations in Garza-Little Elm Reservoir

T.S. Huff, Assistant Engineer, Road Design
and
Sam Huff, Supervising Operations Engineer, Bridge Division

Acting through the Corps of Engineers, the Federal Government, in cooperation with the City of Dallas initiated plan work for developing Garza-Little Elm Reservoir in Denton County immediately after World War II. The twofold purpose of the reservoir was to provide an additional source of water for the City of Dallas and to become an integral part of the Trinity River Flood Control System.

The dam for the reservoir is located on Elm Fork of the Trinity River about three miles downstream from Garza Dam, which impounds the waters of present Lake Dallas. Lake Dallas will be incorporated in the Garza-Little Elm Reservoir when the new dam is completed.

Highways affected by the reservoir plan include U. S. 77 between Lewisville and Lake Dallas, S. H. 24T between Lake Dallas and a point east of Little Elm, and F. M. Road 423 between Lewisville and Garza Dam. Denton County's interest was involved in the acquisition of part of the rights of way for U. S. 77 and the maintenance of local traffic to the Little Elm Community.

Federal expenditure for the replacement of utilities, including highways, is limited by law to a replacement in kind. The service requirements of the replacement may be equal but not superior to the structure being replaced. The replacement or alteration may be on the existing location or on a more favorable location if one can be found.

The initial conference between representatives of the Highway Department and Corps of Engineers to discuss the affected highways was held on April 29, 1947. The following facts were developed at the conference:

1. The Federal Government contemplated the construction of a dam as described above. No funds for construction were available.
2. The Highway Department divulged the need and possible early planning for the expansion of U. S. 77 between Dallas and Denton to four lanes, the work in the vicinity of Hickory Creek to be done on the existing route.
3. The Corps of Engineers suggested that the Highway Department make plans for altering U. S. 77 to an elevation above the reservoir level on a location across Hickory Creek, about 800 feet upstream from the existing crossing. Under this plan, the State would perform and pay for the work, and if further appropriations were made by the National Congress the State would be reimbursed. If the appropriations were not made, the Corps of Engineers would not be obligated.
4. The Corps of Engineers pointed out the physical aspects of subjecting the present Garza Dam to water on both sides. This, together with a need for a greater waterway opening to accommodate the new reservoir, was given as reasons for needing to close this highway and breach the old dam

after the new one is complete.

5. The indefinite status of old State Highway 24 after completion of the new route was explained by the State's representatives. The possibility of the old route reverting to farm road status, and the complex relation between the State and Counties as regards farm roads was carefully explained.

Subsequent negotiations indicated a mutual desire to make separate contracts for altering U.S. 77 and those highways in the vicinity of the village of Little Elm. It was agreed that planning for U.S. 77 would be given prior treatment.

U.S. 77 Across Hickory Creek: The Corps of Engineers' plan, as suggested in paragraph 3 above, was rejected by the Highway Department because of the admitted uncertainty of funds materializing. An alternate plan was presented by them that a contract for preliminary engineering services be executed. Under the suggested terms, the State would prepare a complete set of plans and be reimbursed by the Corps of Engineers. The plan was adopted in principle.

During negotiations leading to the preparation of the draft for a contract for engineering services to be performed by the State, certain points to be mutually agreed on prior to execution of the contract were discovered. These points had direct bearing upon the Federal obligation to replace the existing road and the State's responsibility to expand a two-lane road into a four-lane divided highway. Specifically, these points were location, type of replacement, and division of cost.

As many of these points were detailed in the contract form as possible. The points relating to the commitment of funds were of necessity left in the recommendation stage.

The engineer service contract was finally executed on June 27, 1949. It provided for preparation of P.S. & E. suitable for receipt of bids on a section of highway between Lake Dallas and Lewisville. Since the embankment was proposed to carry the MKT Railroad and several other utilities, planning for the entire embankment was included. The location is illustrated herein. Typical cross sections for the new location are also illustrated.

It should be noted that the contract specified plans for a four-lane facility, whereas the Federal responsibilities were limited to the replacement of the existing two-lane road. To offset the high-type design on the new location, the State Highway Engineer authorized preparation of plans for expanding the existing road to four lanes, the State to bear the costs incurred in preparing the plans. The plans for the existing location were not made a part of the contract. However, the work was agreed to by the State (informally). It was understood that the plans for expanding the old road would be as nearly identical as possible to those provided for in the contract.

It was further agreed (informally) that when and if unit prices were ascertained by receipt of competitive bids on the high-level crossing, these same unit prices would be applied to the identical items found on the set of plans for expanding the existing road. The latter operation would determine at some future time the State's participation in the four-lane, high-level facility.

Thus, upon completion of the two separate sets of plans, either one of two possible courses could be followed:

1. A second contract between the Corps of Engineers could be executed which would provide for the construction of the high-level crossing, permitting the State to pay the difference between a four-lane road on the existing location and a four-lane road on the high-level locations.

2. Or if Federal authority to construct the reservoir was cancelled, the planning contract would be terminated, without further obligation to the Corps of Engineers. The State would then be free to

develop the highway in a normal manner without further regard for the Corps of Engineers.

The former course was adopted when it was determined that Federal funds would continue. A cost reimbursable type of contract was proposed by the Corps of Engineers. The proposed terms would provide for the State to take bids on the entire project, estimated to cost approximately two million dollars. The Corps of Engineers would, after the work was performed, reimburse the State to the extent of its liability, which was estimated to be approximately $1, 200, 000.

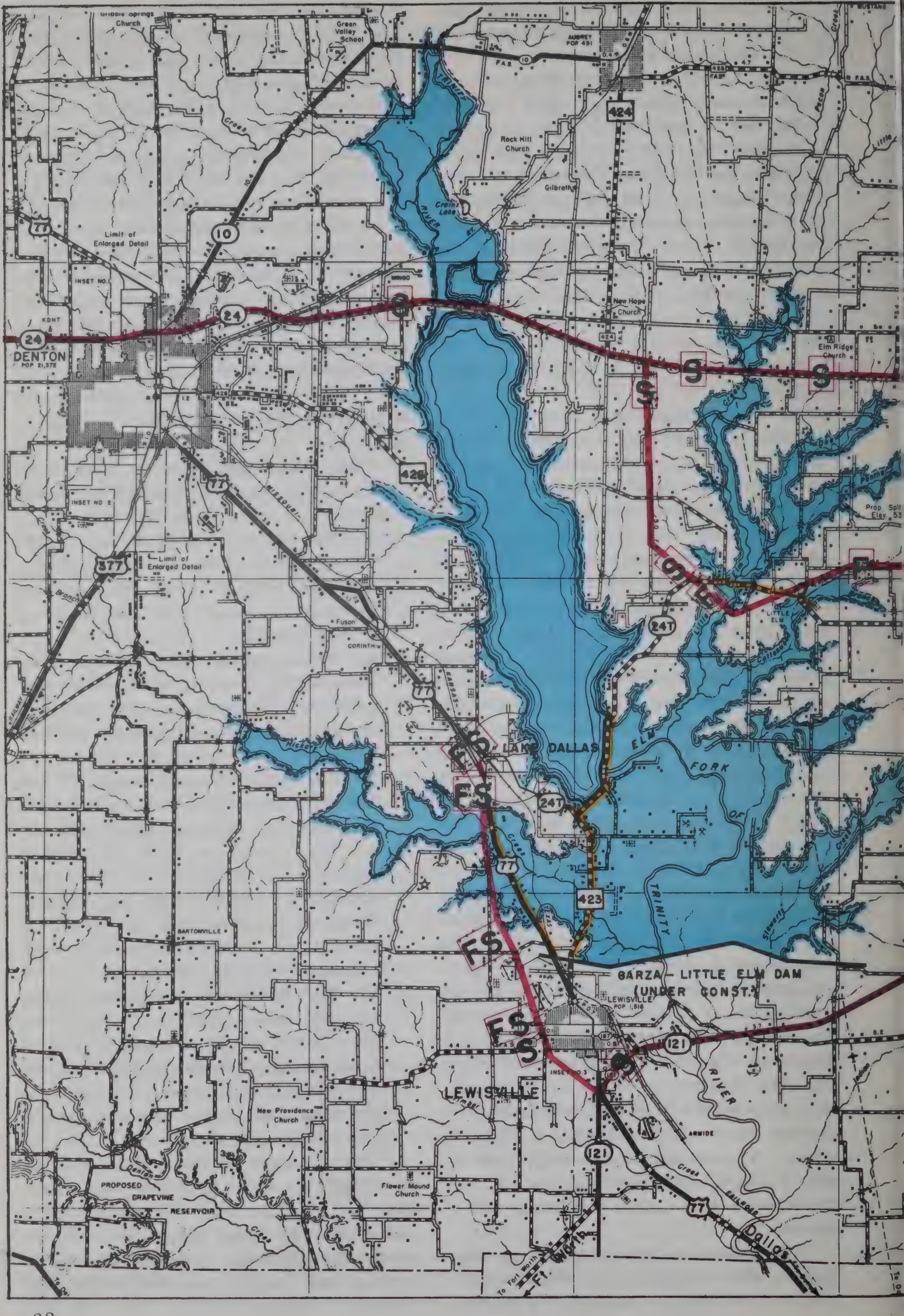
It was determined that Federal appropriations for the work were being made on a continuing basis. It was therefore proposed that the State let a contract in the same manner. The method, which is understood to be standard procedure with Federal agencies, permits taking bids on large quantities of work when only a token appropriation has been made. Machinery for cancellation of contract and demobilization of work is always included in that type of agreement. The State's representatives pointed to several reasons (including its doubtful legality) why they could not recommend a continuing contract. It was suggested as an alternate that the Corps of Engineers should receive bids and perform such part of the work as would complete the Federal obligation. The State would, under this plan, perform all construction engineering, and after the Federal obligation had been completed let contracts in the State's name for the remainder of the work. After the Highway Commission allocated funds for the State's portion of the work, this procedure was adopted under the terms of a contract dated May 15, 1952. The respective obligations of the Federal and State agencies are summarized in the following paragraph.

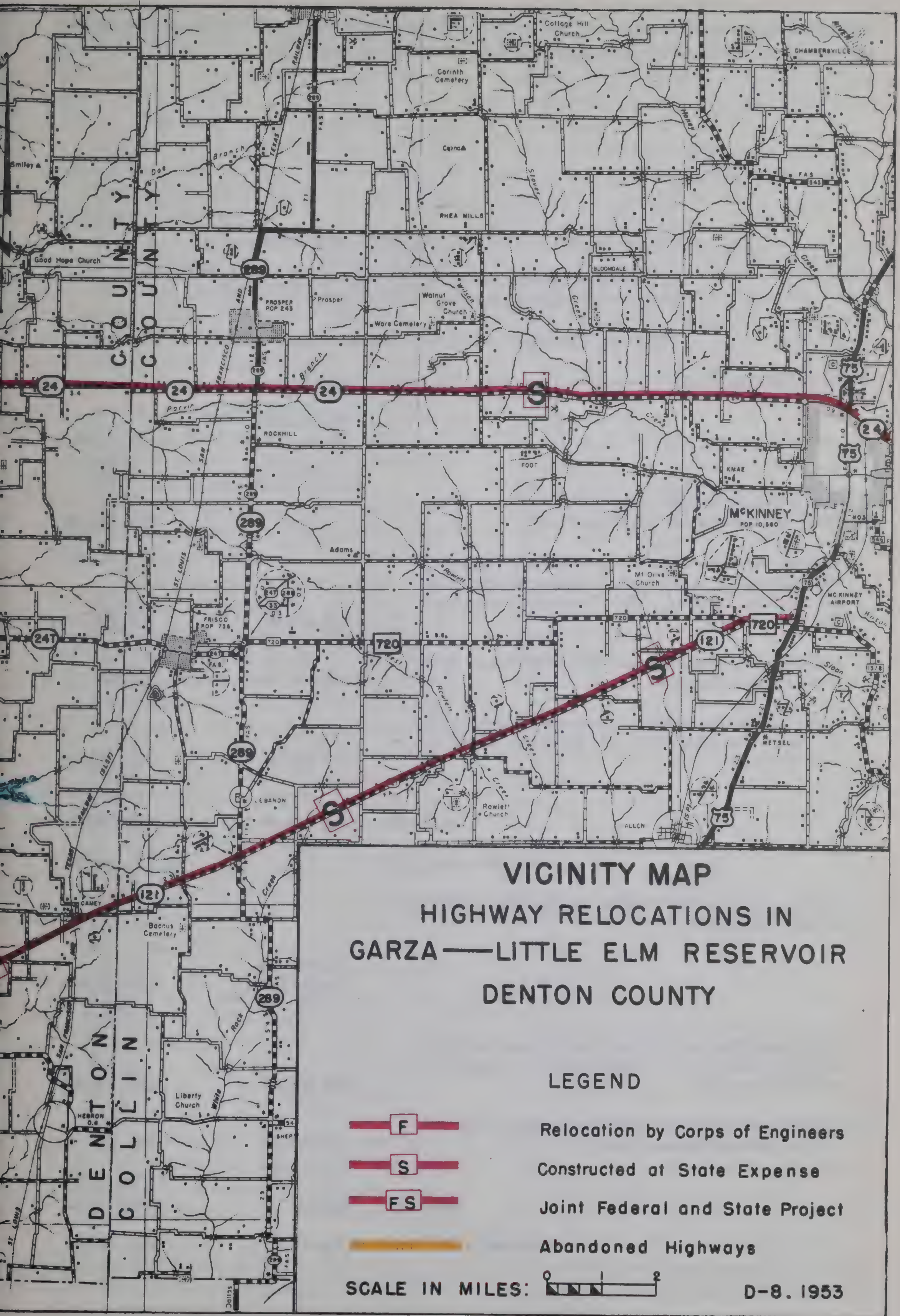
Estimates revealed that the approximate obligation of the Government would be discharged by awarding contracts for embankment, small drainage structures, slope protection, roadbed treatment and other minor items of grading, and for furnishing structural steel for the Hickory Creek Bridge. Likewise, the obligation of the State could be discharged by contracting the Hickory Creek Bridge, the roadway surfacing and other incidental and related items required to provide a complete highway. It was agreed that construction engineering on both State and Government contracts would be furnished by the State and that the Government would reimburse the State an amount equal to 7 per cent of the Government's obligation for construction engineering.

The following actions have been taken to implement the terms of the contract:

1. The Corps of Engineers awarded a contract September 23, 1952, for fabrication and delivery of structural steel for the Hickory Creek Bridge.
2. The Corps of Engineers issued work order December 16, 1952, for grading drainage structures and roadbed treatment between Lewisville and Lake Dallas. The work included the embankment for the MKT Railroad and space for other utilities across Hickory Creek.
3. The State awarded a contract January 30, 1953, for the construction of the Hickory Creek Bridge, including the erection of structural steel furnished by the Corps of Engineers.
4. The State has prepared plans and will receive bids for surfacing four lanes between Lewisville and Lake Dallas. Bids will be received the earliest date which will permit construction on the roadway grade now under construction.

The division of contract responsibility was determined along lines which would permit each agency to stand behind its own obligation. Also, from the State's viewpoint, it was considered highly desirable that the Federal obligation be met before


Gribble Springs Church
Green Valley School
Aubrey Pop 491
Mustang
F.A.S.
10
424
428
Rock Hill Church
Gilbroth
Trinity
Creek
Crains Lake
River
Pecan Creek
Limit of Enlarged Detail
Inset No. 1
Kont
24
Denton Pop 21,372
Mingo
S
New Hope Church
Elm Ridge Church
S
S
S
Inset No 2
77
Missouri
Prop Spil Elev 53
377
Limit of Enlarged Detail
Branch
Railway
Fuson
Corinth
Kansas
24T
Little Elm
Cottonwood
Lake Dallas
Elm Fork of Trinity
Hickory
FS
FS
24T
423
Stewart Creek
Bartonville
FS
Garza - Little Elm Dam (Under Const.)
Lewisville Pop 1,516
FS
S
121
Inset No 3
Lewisville
River
New Providence Church
Armide
121
Proposed Grapevine Reservoir
Denton
Creek
Flower Mound Church
77
Dallas
To Fort Worth
Ft. Worth


VICINITY MAP
HIGHWAY RELOCATIONS IN
GARZA—LITTLE ELM RESERVOIR
DENTON COUNTY

State funds were expended. The latter precaution precluded spending State funds on a project which might in the end be cancelled.

COST ESTIMATES FOR CONTRACT NEGOTIATIONS

RELOCATION OF U.S. HIGHWAY 77 AND M-K-T R.R. AT GARZA-LITTLE ELM RESERVOIR, DENTON COUNTY, TEXAS

ESTIMATE SUMMARY AND COST DISTRIBUTION ANALYSIS

A. Total Estimated Cost of Construction Along Route Proposed by Government

	Engineering During Const. 7%	Construction Costs
1. Furnish Structural Steel and Railing for Hickory Creek Bridge (By Government Supply Contract)	----	$203,208.00
2. Grading, Drainage Structures, Roadbed Treatment, Slope Protection & M-K-T R.R. Bridge Abutments as per estimate February, 1952 (Work by Government Contract)	$68,429.82	978,250.18
3. Hickory Creek Bridge - as per estimate February, 1952 (Work by State Contract)	24,123.78	344,776.22
4. Surfacing and Incidentals to Complete Relocation - as per letter November 28, 1951, (adjusted) (Work by State Contract)	29,820.00	426,000.00
Sub-Total	$122,373.60	$1,952,234.40
Total Relocation Cost		$2,074,608.00

B. Less Construction Costs for Four Lanes Old U.S. Highway 77 (State's Obligation)

	Engineering During Const. 7%	Construction Costs
1. Reconstruct Highway 77 along route proposed by State (not to be constructed) except surfacing - as per estimate February, 1952	$28,254.15	$403,630.67
2. Surfacing route proposed by State (not to be constructed) - as per estimate February, 1952	27,283.00	389,757.15
Sub-Totals	$55,537.15	$793,387.82
Estimated Cost of State's Obligation		$848,924.97

Highways in the Vicinity of the Village of Little Elm: Events leading to the resumption of negotiations in 1951 for a contract for this part of the project included:

1. The apparent decision of the Corps of Engineers to provide highway services for the village in lieu of purchasing the land and other real property.
2. The failure of the State Highway Commission in 1951 to remove old State Highway 24 from the system after relocated Highway 24 was placed in service. The Garza Dam crossing, thereby, remained the responsibility of the State instead of reverting to Denton County as once supposed. The replacement of service on F. M. Road 423 also had to be considered.

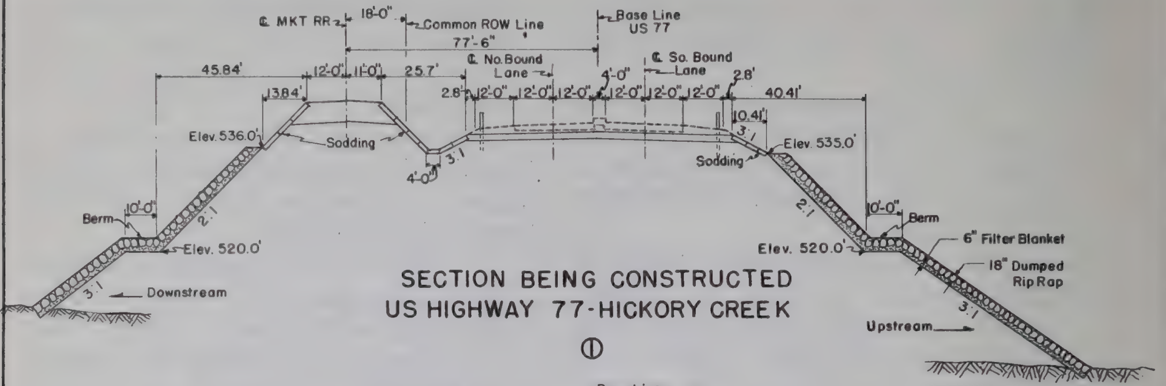
Background for action by the State's representatives is contained in the following summary:

1. On March 15, 1949, the State Highway Engineer advised the Denton County Judge that insofar as old Highway 24 and F. M. Road 423 are concerned this Department would not want to reach an agreement with the Corps of Engineers unless Denton County was in complete agreement. He further advised that it appeared evident that F. M. Road 423 would be inundated.
2. On March 22, 1949, the Judge's reply to the State Highway Engineer expressed agreement to the abandonment of F. M. Road 423. He advised that by resolution passed March 21, 1949, the Commissioner's Court of Denton County was of the unanimous opinion that old Highway 24 in the town of Lake Dallas across Garza Dam by way of Little Elm to Frisco should remain open in its present location.
3. Subsequent to the above correspondence both the State Highway Engineer and Denton County Judge advised the Corps of Engineers of the joint State-County position regarding local roads in the proposed reservoir. The judge suggested a Federal-State-County conference for the purpose of reaching a mutual agreement regarding the rerouting and possible closure of State and County roads in the reservoir area. No such meeting was held.

At a meeting between the Corps of Engineers and representatives of the Highway Department the following facts were divulged:

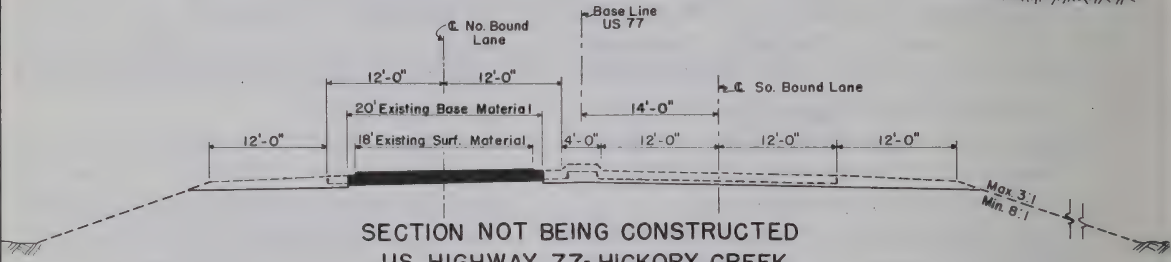
1. The Corps of Engineers advised that they had not discussed state highways with Denton County. They expressed the opinion they had no obligation to discuss the roads with the County as long as the routes in question are maintained by the State.
2. The Corps of Engineers further advised their intention to request the Highway Department to transfer all its rights within the reservoir area, including old Highway 24 and FM Road 423, to the Government. The Corps of Engineers expressed its future intention to breach Garza Dam and completely destroy F. M. Road 423. As a substitute for services previously provided by old State Highway 24 and F. M. Road 423, the Corps of Engineers expressed an intention to raise old Highway 24 in the vicinity of the village of Little Elm and to provide a new route near the east shore of the proposed lake connecting old Highway 24 and State Highway 121. This plan, together with F. M. Road 388 connecting Little Elm with relocated State Highway 24, caused the State's representatives to inform the Corps of Engineers that they would recommend its adoption. See map for information as to who financed the several roads. However, it was stated that concurrence of Denton County would be required.
3. The Department's District Engineer assumed the task of contacting the Denton County Commissioner's Court for this purpose.

By resolution dated March 19, 1952, the Denton County Commissioner's Court took the following action:



SECTION BEING CONSTRUCTED
US HIGHWAY 77-HICKORY CREEK

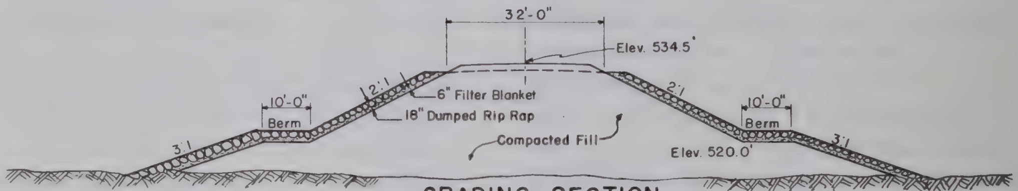
①



SECTION NOT BEING CONSTRUCTED
US HIGHWAY 77-HICKORY CREEK

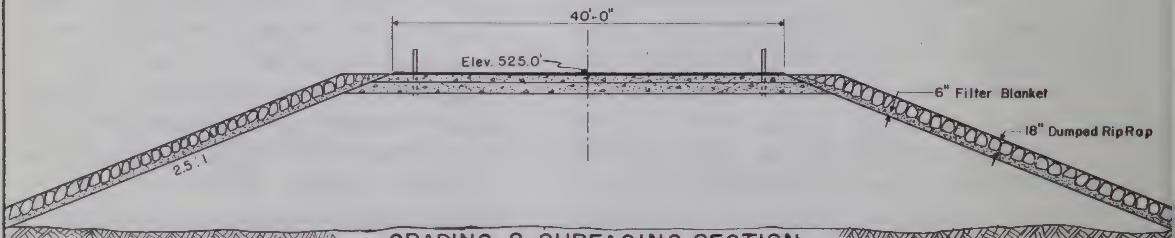
Used As A Basis For Determining State's Participation in Project Being Constructed

②



GRADING SECTION
ST. HWY. NO. 24T

③



GRADING & SURFACING SECTION
RELOCATED FARM ROAD NO. 423
AT STEWARTS CREEK

④

"Be it resolved that the Commissioner's Court of Denton County concurs in the agreement made by the State Highway Department and the Corps of U. S. Army Engineers regarding the relocation of all State Highways and Farm Roads located in the confines of the Garza-Little Elm Reservoir Area as presented to the Commissioner's Court of Denton County by Frank Cawthon, District Engineer for the State Highway Department on Monday, March 17, 1952."

The preceeding recommended agreements were transmitted to proper officials in the Austin office, March 21, 1952. The State Highway Commission passed Minute Number 31851 ratifying the agreements.

The alignment for the relocated highways is illustrated in the accompanying map. Typical sections for the proposed roads are also illustrated.

During negotiations for a satisfactory draft of the contract between the Federal and State Governments for performing work, the Corps of Engineers advised that only a lump-sum type of contract would be acceptable. The uncertainty of future prices, the State's inability to accurately estimate quantities, and the engineer shortage caused the State's representatives to request the Corps of Engineers to receive bids and award contracts for the work. The State's representatives agreed to recommend that its forces perform only engineering services.

A contract based upon this principle was submitted to the State on October 29, 1952. The draft was approved by the State on January 6, 1953.

Estimated cost of the work is $634, 000, including engineering.

Governmental levels interested in the development of these projects include County, State, and Federal. It was known from the beginning that the State Highway Department could negotiate successfully with either or both of the others. It was also known that the interests of the Federal and local authorities clashed.

The latter situation very possibly resulted from the lack of Federal understanding of a very real local traffic problem. Local interests (Denton County) were loath to abandon established routes merely to accommodate a reservoir being constructed for another County's benefit. Also it is possible that local interests failed to recognize a very real engineering problem faced by the Corps of Engineers. The latter problem resulted from the practical impossibility of maintaining a road across old Garza Dam after the new dam is finished.

As described in detail above, the State Highway Department was able to reconcile the divergent interests. It is a tribute to those persons in Federal and County authority that the interests could be successfully reconciled at a minimum cost.

● ● ●

YOU'RE THE DOCTOR . . .

Preventive maintenance is good medicine for long equipment life. Your operator's Instruction Book is invaluable in the fight to conserve machine life. Read and reread it. Follow the operation, lubrication, and maintenance recommendations. They're down to earth . . experience has proved them practical and effective. Don't wait until wear gets beyond repair --- many a part can be rebuilt if serviced in time.

In Roadside Parks...

Salvage Guard Fence Cable

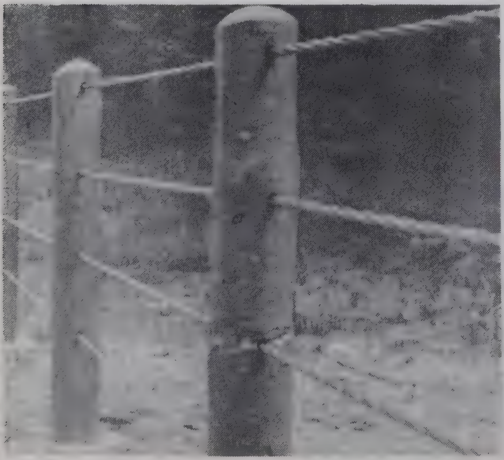
F.M. Davis, District Engineer
District 15

Charles Korbell, Senior Maintenance Foreman at Hondo, and B. R. Wood, Senior Maintenance Foreman at Floresville, have found a good use for three-fourths-inch salvaged round wire guard fence cable and three-inch salvage wire tape guard fence.

Maintenance of fences in the back of Roadside Parks has always been a problem on account of park users crawling through the fence into adjacent pastures and loosening the wires.

By using four strands of three-fourths-inch round cable, or three of the wire tape, a very attractive, sturdy, and economical fence was built which permitted people to go through without difficulty.

Where the fence is required to be sheep-, goat-, or hog-proof, the cable would have to be supplemented with mesh wire.



POWDER-DRIVEN STEEL PINS

P.H. Caldwell, Senior Resident Engineer
and
Oscar Broyles, Resident Inspector
District 12

The Texas Highway Commission awarded a contract to Austin Road Company on July 2, 1952, for the widening of two San Jacinto River relief bridges on U.S. 90 in Harris County, designated as Control 28-2-17. Each of these bridges consisted of eleven 28-foot, 6-inch concrete girder spans, having a twenty-foot roadway width. They were widened to 28 feet. In order to permit, at some future date, the widening of the existing twenty-foot pavement on one side only, it was decided to widen the bridges six feet on one side and two feet on the other.

One concrete pile was driven and the cap extended at each bent on the side which was widened six feet. However, the cap was not extended on the other side and the new girder had to find support on the narrow ledge of the old cap extending beyond the outside face of the old girder. In most instances, this was scarcely the nine-inch bottom width of the new girder. To anchor the new girder securely to the old girder, thus supplementing the anchorage provided by the welding of the transverse reinforcement in the old deck to that in the new two rows of one-fourth-inch to three and five-eighths-inch steel pins, eighteen-inch centers were driven into the face of the old girder. The specification provided a minimum penetration for these pins of one and one-fourth inch. These are known as powder-driven pins. A hardened steel pin is simply inserted into the barrel of a gun which is loaded with a cartridge of sufficient calibre to eject the pin with such force when fired that it will imbed itself into such seemingly impervious materials as steel and concrete to a depth of one and one-half to two inches.

The gun is simple enough to operate, but like all guns, much more effective results and fewer misses are obtained when it is manned by an experienced operator. A squeeze trigger would probably improve the performance. When a successful drive is made and the pin reaches the desired penetration into well-cured concrete, it will doubtless withstand the tensile pull which the producer claims. It is regretted that some sort of device was not rigged on this particular project by which this ability could have been measured. The practical use of this quality is, however, believed to be greatly reduced by the fact that any forceful disturbance of the exposed portion of the pin may tend to loosen the powdered concrete in which it is imbedded. This would permit the easy removal of the pin unless the point of the pin has been bent into a hook by the aggregate. Frequently this happens before the pin has reached sufficient penetration for the concrete to withstand the chipping effect of the diversion. The pin then reverses its direction completely and the operator is confronted with a chipped depression in the concrete and a useless steel hook. It is then useless to attempt to drive another pin within three or four inches of the depression. It was found that the percentage of successfully imbedded pins was approximately only 60 per cent instead of the 80 per cent originally estimated. It seems that the larger diameter pin is more likely to attain the desired penetration, but is more susceptible to dislodgement by a forceful disturbance of the exposed portion.

Although these observations may indicate that the field for practical use of pins is greatly limited, it is nevertheless believed that they can be of great value in certain phases of construction. The shear support afforded by the larger pins is no doubt very great as is their tensile strength if undisturbed until the new concrete is placed around them. The firing of the pin through lumber and thence into concrete tends to increase the percentage of successful penetrations.

The pins could be used for temporary scaffolding, bracing and shoring, form ties for additions to existing walls, anchoring new curbs, traffic indicators, and lane markers. They could be used in building construction for the anchoring of partition plates and floor joists, and plumbing and electrical conduits. It is doubtful that a lion could be killed with this gun, but one could certainly nail his hide to the wall.

RESULTS OF PITTSBURGH LABORATORY TESTS

Holding Power of Drive-Pins in Reinforced Concrete

Stud Number	Power Plug	Penetration, Inches	Pull-out load, Pounds
T-14	Lo	1 7/32	2,200
T-14	Med	1 9/16	1,880
T-31	Hi	1 1/2	1,520
T-32	Hi	1 3/8	1,700
K-53	Hi	1 11/64	970
K-53	Hi	1 9/64	1,135

Holding Power of Drive-Pins in Steel Plate

Stud Number	Power Plug	Plate Thickness, Inches	Pull-out load, Pounds
T-71	Hi	3/8	2,750
T-71	Hi	3/8	2,040
T-71	Med	1/2	6,460
T-71	Hi	1/2	4,760
MSF-21	Med	3/8	4,910
MSF-21	Lo	1/4	1,930

Initiative

Three brothers left the farm to work in the city and were employed by the same company, starting at the same pay. A year later one received $100 a month, the second $200 and the third $400.

Their father, hearing of their salaries, decided to visit his sons' employer and find out why they were paid on what seemed to be such an unfair basis.

"I will let them explain for themselves," said the boss, as he pressed a button under his desk.

Jim, the lowest paid man of the three, answered by coming into the office.

"I understand the Oceanic has just docked," said the employer. "Please go down to the pier and get an inventory of her cargo."

Three minutes later Jim was back in the office.

"She carries a cargo of 2,000 seal skins," reported Jim. "I got that information from the first mate over the phone."

"Thank you, Jim," said the boss. "That will be all."

He pressed the button again, and Frank, the $200 man, reported.

"Frank, I wish you would go down to the dock and get an inventory of the Oceanic's cargo."

An hour later Frank was back with a list showing that the Oceanic not only carried 2,000 seal skins, but also 500 beaver and 1,100 mink pelts.

The employer pressed the button a third time, and George, the $400 man, walked into the office.

He was given the same instructions his brothers had received, but did not return for three hours. The office had closed for the day, but his father and the boss were waiting for him.

"The Oceanic carries 2,000 seal skins," he began. "They are offered at $5 each, so I took a two-day option on them, and I have wired a prospect in St. Louis, offering them to him at $7. I expect to have his order tomorrow. I also found 500 beavers, which I sold over the telephone at a profit of $700. The mink pelts are of poor quality, so I didn't try to do anything with them."

"That's fine, George," said the boss. When George had gone, the employer turned to the father and smiled.

"You probably noticed," he said, "that Jim doesn't do as he is told. Frank does as he is told. But George not only does what he's told. He goes ahead without waiting to be told what to do when there is a chance to make profits for the firm."

Good Judgment Must Accompany Initiative.

Virginia Highway Bulletin

STATUS OF SPEED ZONING ACTIVITIES

Fred T. Bennett, Engineer, Traffic Services

At the request of the Highway Commission and Mr. Greer, we have made a study of how speed zoning of our highways has progressed since the law was passed two years ago.

In the administration of the present speed law, the districts were requested to take two steps:

1. As a "stop-gap" measure, check the location of all existing 30-mile-per-hour speed limit signs on the approaches to unincorporated towns, and where necessary relocate them to comply with the definition of business and residential districts.
2. As time and personnel permit, make an engineering and traffic investigation to determine what reasonable and prudent speed limits should be and then set the speed limits by Commission Minute.

The greatest benefit, in our estimation, derived from our present law is the ability of the Highway Department to remove the old 30-mile-per-hour speed signs that were placed indiscriminately on our highways, in some instances, as much as several miles from a community, thereby creating the greatest disregard for our speed laws. By removing these signs and placing them at the edge of a residential or business area as defined by the law, we are able to establish a transition speed limit between the maximum 60-mile-per-hour speed and the 30-mile-per-hour speed limits approaching unincorporated towns.

Some of the districts have made speed zone studies on the highway approaches to incorporated cities where roadside development requires a speed lower than the state-wide maximum for safe operation of traffic. In such cases, the cities have been asked to cooperate in adjusting speed limits upward inside the corporate limits by ordinance to correlate with those set outside the corporate limits by Commission Minute.

The results of the speed zoning work to date seem to indicate that it is a worth-while activity, and we believe it has accomplished the following ends where applied:

1. Provided an opportunity for the Department to set reasonable and prudent speeds through unincorporated towns that command a greater degree of public respect.
2. Encouraged more drivers to drive in the same speed range, thereby discouraging the desire for overtaking and passing in congested areas where such practice is hazardous.
3. Provided a measure for lower speeds at school crossings.
4. Provided an opportunity to set reasonable speed limits on highway approaches to incorporated towns.
5. Provided an opportunity for the Department to cooperate with cities in setting reasonable speed limits on highway routes through their corporate limits, thereby reducing the possibility of speed traps that result from unreasonably low speed limits.

On the following page is a tabulation by districts of the progress of the speed zoning for the past two years.

TABULATION OF SPEED ZONES
AS OF APRIL 22, 1953

Dist.	Zones in Unincorporated Cities & Towns			Zones on Urban Approaches			Total Miles Zoned by Comm. Minute	Zones Set by City Ordinance where the Department Assisted the City in Determining Speed Values and Zone Lengths
	No. of Towns with Zones	No. of Highways Zoned	Miles	No. of Cities	No. of Highway Approaches Zoned	Miles		Number of Cities
1	1	1	0.64	3	11	5.66	6.30	0
2	0	0	0.00	4	8	7.01	7.01	1
3	0	0	0.00	2	5	10.89	10.89	0
4	0	0	0.00	1	2	2.48	2.48	0
5	0	0	0.00	2	3	4.51	4.51	0
6	4	4	2.42	4	7	5.49	7.91	0
7	7	9	8.37	1	3	1.19	9.56	0
8	1	1	1.00	2	5	6.25	7.25	0
9	2	2	2.60	2	2	5.49	8.09	0
10	0	0	0.00	10	27	17.29	17.29	1
11	13	16	7.34	0	0	0.00	7.34	0
12	14	14	13.68	3	8	22.93	36.61	0
13	0	0	0.00	1	1	0.60	0.60	0
14	8	8	5.55	12	29	10.60	16.15	12
15	5	5	6.46	6	13	8.62	15.08	3
16	0	0	0.00	1	1	8.82	8.82	0
17	0	0	0.00	0	0	0.00	0.00	0
18	0	0	0.00	1	1	4.48	4.48	0
19	0	0	0.00	2	2	0.75	0.75	0
20	4	4	4.67	2	2	4.78	9.45	0
21	21	28	18.04	2	2	24.84	42.88	0
22	1	1	0.57	2	5	2.12	2.69	0
23	1	1	0.52	1	2	1.25	1.77	1
24	0	0	0.00	2	5	25.92	25.92	0
25	10	10	5.52	0	0	0.00	5.52	0
TOTAL	92	104	77.38	66	144	181.97	259.35	18

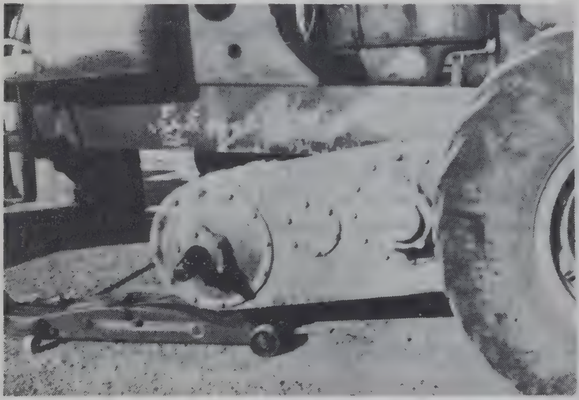
Moving Crippled Tandem Drive Equipment

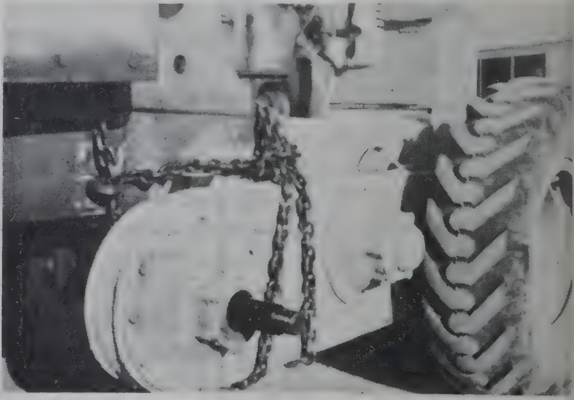
C.G. Wood, Senior Maintenance Foreman
District 15

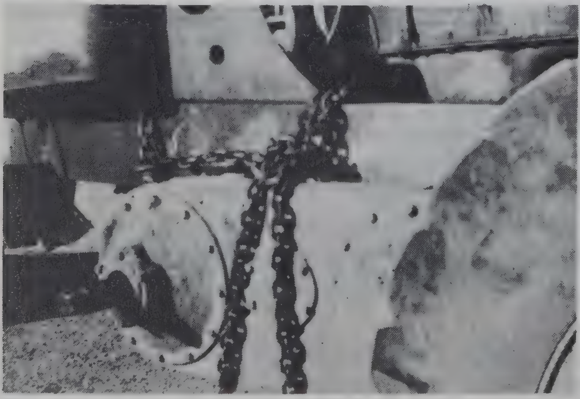
It is sometimes desirable to move a tandem drive maintainer that is crippled on the rear wheels.

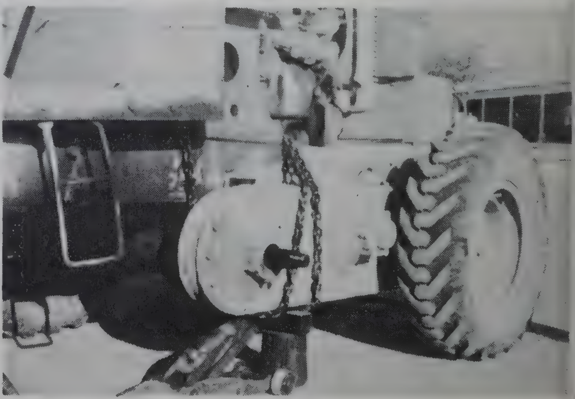
A method was devised by a maintainer operator in the Kerrville Section, whereby a tandem machine with a flat tire on a tandem wheel, or a broken axle on a tandem wheel, can be readily moved without further damage.

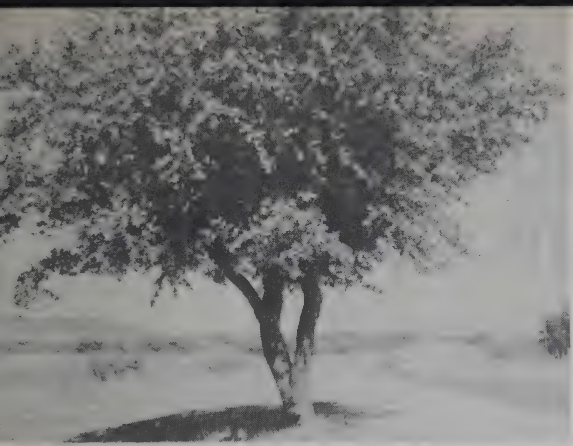
A jack is placed under the end of the tandem housing where the damage is. With a chain, or other attachment, the housing is fastened to the frame so that when the jack is removed, the housing is suspended. Thus, the machine can proceed to a place of safety on the remaining tandem wheel. It is even possible to remove existent hazardous rolls of dirt or other material with this arrangement.



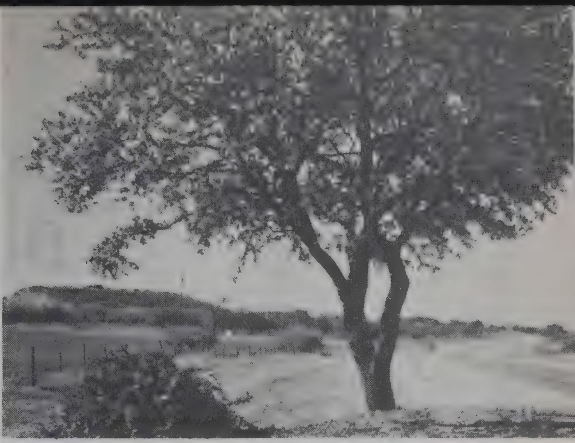








BEFORE: Live oak tree on U.S. 84 in Mills County. Note dense top that needs thinning.



AFTER: We want to see lots of daylight when looking through tops of trees. Note the clean and healthy appearance.

Pruning and Watering

Ben J. Lednicky, Senior Landscape Adviser

At a glance, the tree in Picture 1 might appear to be in good shape, trimmed much better than many trees found along our highways and that little else could be added.

This is not the case, however. When looking at a tree, we want to see daylight, as a matter of fact, lots of daylight as in Picture 2. There are three reasons for this. One is that by thinning the top we reduce the wind resistance taking much strain off of the tender, feeder roots. Also, sunlight and fresh air is allowed to enter into the top of the tree. A third reason is that by eliminating all the excess baggage, crow nest, pin feathers, or superfluous growth, we greatly reduce the amount of food and water required to sustain this unnecessary growth.

Note the size of the pile of twigs, branches, and limbs in Picture 3 that were removed from the tree that the untrained person may have thought was correctly pruned. This pile of trimming weighed 285 pounds and represents a total of 22,758 gallons of water that this tree had to secure to manufacture this superfluous growth which will now be burned. With a little help from mankind, this tree would have secured all the water necessary to sustain itself and this would have added greatly to the growth and beauty of the tree.

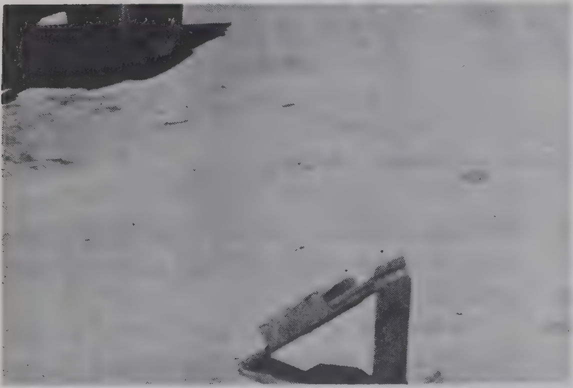
This pile of superfluous growth, weighing 285 pounds, represents a total of 22,758 gallons of water that the tree labored for under adverse conditions, only to discover that all of that effort was in vain.

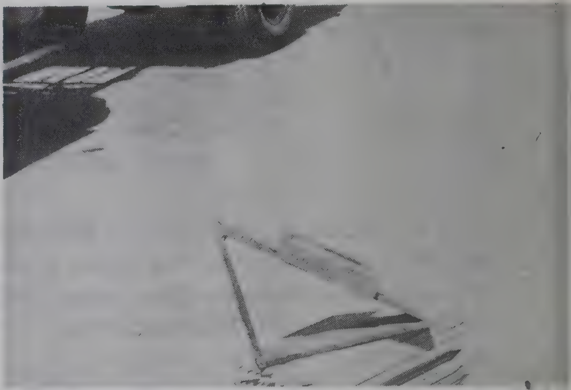
SAFETY LOCK FOR DUMP TRUCK BODY

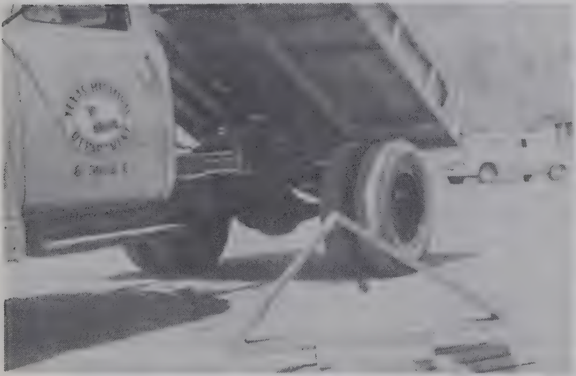
C.C. Bull, Shop Foreman
District 6

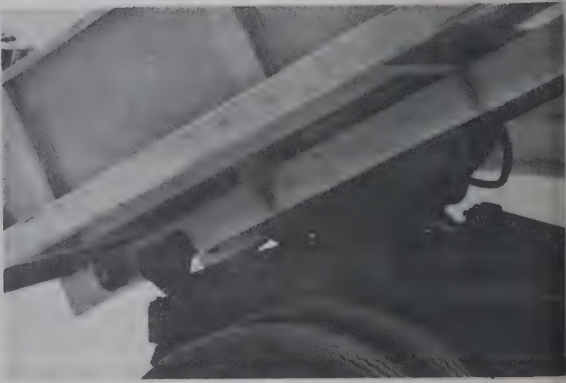
We have developed a safety lock to hold the dump body of a truck in a raised position while repairs are being made underneath it.

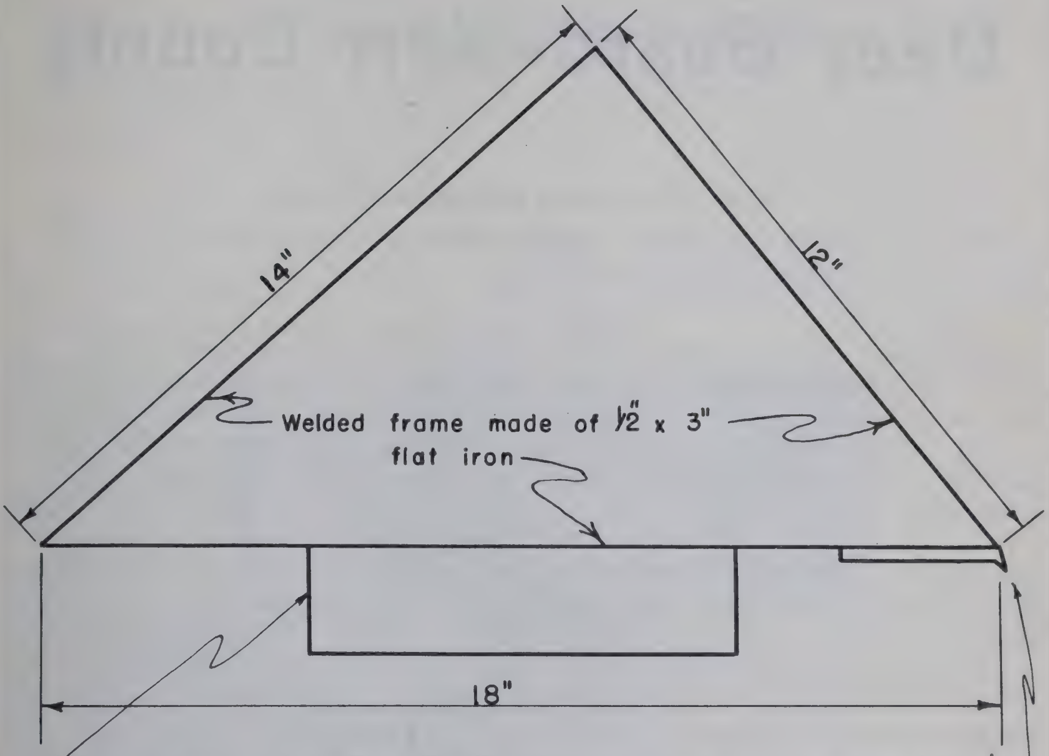
The safety lock is a welded frame of scrap pieces of flat iron and one of the locks is placed under the raised body on each side of the truck frame. Earl Bell, welder in the District Shop, constructed this lock, and it is a very effective safety device.











Two pieces of 5/16" x 2" x 8" flat iron welded to each side to hold lock on frame of truck.

Stop is made of 3" truck spring bent down 1/2" and sharpened. The sharp end of spring prevents slippage of the lock on truck frame.

SKETCH SHOWING
DETAILS OF
SAFETY LOCK FOR DUMP TRUCK BODY

Deer Guard—Kerr County

C.G. Wood, Senior Maintenance Foreman

District 15

After about a year of observation, a more accurate report can be made about the Deer Guards on State Highway 39 which were described in Construction and Maintenance Bulletin Number 15.

A few deer have been seen in the high-fenced, or forbidden area of the right of way. Although nobody has reported seeing any deer cross the guard in recent months, there is some evidence that part of those seen in the forbidden area have actually crossed the guard.

However, it is the opinion of the ranchmen who have reported their observations that most of the deer seen in the high-fenced area have entered by other ways. For instance, a fast-running deer can jump high enough to clear the mesh wire, and by slightly turning, they can glide between the mesh wire and the strands of barbed wire at the top of the fence. Heavier deer have been known to leap in the same way, but instead of passing between the strands, they strike and break, or stretch a strand of wire near the top of the fence, thus passing through. Sometimes, but rarely, they leap over the entire fence, occasionally failing to clear but by scrambling can get over.

Following a recent rain, deer sign was observed on the wrong side of the wing fence of the guard. The evidence pointed to only one deer and the sign was carefully studied with the following conclusion: The tracks indicated the deer was coming down the right of way toward the deer guard when it was startled by something, most likely a car. It evidently crossed the guard at a fast run. About forty feet past the guard, it suddenly stopped, probably when the car passed. The tracks were lost in the rough terrain. This deer was in the forbidden area and crossed into the open range side of the guard. It possibly gained entrance into the forbidden area at some other point.

Sign seen on the wrong side of the wing fence at other times appeared to indicate at first a large number of deer had been trapped in the forbidden area. But closer observation revealed only one, or possibly two, had been hemmed against the wings, and passing cars caused them to move about, causing an unusual amount of sign to be made.

On the open range side of the guard, or where the deer are expected to range, sign made there indicates that many, many deer pass across the road, but rarely does one of them cross the guard into the forbidden area.

The ranchmen in the vicinity are enthusiastic in their approval of the arrangement.

STANDARDIZATION
OF TRUCK DRAWBAR HITCHES

J. D. Willson, Senior Maintenance Superintendent
District 5

In our maintenance work in District 5 we use quite a bit of equipment that has to be towed behind trucks. We have standardized on drawbar hitches now, so that any truck in the District can hitch to any piece of towed equipment without any delay in making the hitch.

Tom Warden, district blacksmith and welder, is shown with eight of the hitches which are made from three-and-one-half inch by three-eighths-inch angle iron welded together to form a box.

The hitch is installed on this truck.

"Comments From the Traveling Public"
OVER THE HIGHWAYS

Texas Highway Department
Yoakum, Texas

Att: Mr. Zay Johnson
District Maintenance Engineer

Dear Sir:

I would like to state that it makes one rather proud of one of their state departments, that they take the trouble and have the consideration to investigate so small an item. I think your attention to the matter of the cook stove is very commendable.

I am enclosing $2 which I hope will cover the mailing expense of the Coleman cook stove. Please don't worry about damage to the stove as it won't make a great deal of difference if it is damaged. I cannot anticipate the possibility of being able to make a trip to Yoakum in the near future, and will deeply appreciate your mailing the stove to the address listed below.

Sincerely yours,

E. E. Mathis
Houston, Texas

C & M expresses its appreciation to District 13 for forwarding copies of the correspondence regarding this incident of a camp stove left in a park. We would like to reproduce similar letters of commendation undoubtedly received in other districts. They serve as reminders to all of us that by sowing little seeds of kindness we can reap a bountiful harvest of good will.

I feel the state owes me $12.50 for having the tar cleaned off and a re-Simonizing job done on my 1953 Studebaker.

I was routed through some freshly tarred surface between --- and --- this morning.

It seems the state should be held responsible or should reroute traffic. In any event, I'm out that amount and will expect an early settlement.

(Signed)

THE HUMAN TOUCH . . .

Even in the business of building highways, we sometimes come in contact with a little touch of life that makes us glad we're humans serving humanity. And sometimes the director of highways is called on to direct footpaths, too.

State Highway Department
Austin, Texas

Dear Sirs:

I have a restitution to make to you, that has been on my heart for some time. I do hope you will forgive me for these acts.

Two more boys and I were out hunting one night near our ranch in --- County, between --- and ---, on Highway ---. There was a highway number sign there and we knocked it down with the car. We also did some shooting on the highway which is against the law.

I know I broke the law when I did these things, and am subject to some kind of a penalty. Of course it is up to you what you do with me.

I am 16 years old. I am trying to get my back life fixed up so I can be the kind of a Christian I ought to be.

Sincerely,

(Signed)

Dear ---:

I have just received your letter of May 13 in which you refer to the violations of Texas law in which you had a part near your ranch in --- County on our State Highway ---.

It is most inspiring to receive a letter of this type in which you properly make full and complete admission of your past errors and request forgiveness. This is a wonderful attitude and a highly commendable action that you have taken. Please be assured that insofar as the Texas Highway Department is concerned, it is our real pleasure to extend to you our forgiveness for these misdeeds, with the hope that you will continue in the way you have now chosen in order that you may become one of those citizens of whom America will some day be proud.

With kindest personal regards.

Sincerely yours,

D. C. Greer
State Highway Engineer

P. S. As a token of our appreciation of the action that you have taken, we are sending to you, under separate cover, a copy of our newest State Highway map with our compliments.

. . . People drive too fast. We drove 55 to 60 and half the state passed us flying . . .

Birmingham, Alabama

. . . We didn't like the speed limit, which is not observed by 90 per cent of Texas cars . . .

Rockford, Illinois

. . . Stone thrown up from highway broke my windshield (State car passing me) . . .

S. C. Rogers
Ossipee, New Hampshire

. . . Routes through cities were sometimes confusing. How about a billboard map as we enter . . .

F. J. Allen
San Diego, California

. . . We had a very pleasant journey through your state. Would suggest more signs along highways giving miles to next important town. Enables tourist to quickly judge his time and gas requirements. Also if circulars were made available with maps in important and historic cities and places in these cities the tourist could pick one up and visit these points of interest himself and not be dependent on the guided tours . . .

J. M. Moore
Miami, Florida

. . . We didn't like the highway marking through towns and cities. I would give you my ideas if you would like to hear them . . .

Bernard Osowski
Minto, North Dakota

. . . There were broken bottles and beer cans all over Texoma Lake beach . . .

Stanley Pointer
Villa Park, Illinois

IN MEMORIAM

Willie Stamnitz was fatally injured May 11, 1953. He was a maintenance employee engaged in flagging traffic for a Volume and Weight Survey Party about fifteen miles east of Houston on U.S. 90.

A truck struck this employee after failing to heed warning signs, barricades, and flagman, even though other traffic had stopped.